# THE BUILDER
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C. Baker
Clarkson's

**Tanks, Cisterns &c.**
Braby, F. & Co.
Builders' Material Association
Butterfield, W. F., Ltd.
Farmiloe, George & Sons, Ltd
London Galvanised Iron Co Ld
Mather & Platt, Ltd.
National Galvanizers Ltd.
Nicholls & Clarke, Ltd.
Shaw, M. T. & Co.
Young & Marten Ltd.

**Tar (all kinds)—**
Woods, Sons & Co.

**Tar Boilers—**
Phœnix Engineering Co. Ltd

**Terra Cotta—**
Dennis, Henry
Hathern Station Brick Co., Ld.
Leeds Fireclay Co. Ltd.

**Tiles—**
Bomert, Teves and Blankley
Cope & Co
Dennis, Henry
Hodge, F., Ltd.,
Leeds Fireclay Co Ltd.
Maw & Co., Ltd.
Minton Hollins & Co. Ltd.
Walker, Chas. & Co.
White, Child & Beney, Ltd.
Wire, A. D. Ltd.

**Timber—**
Aston Grant & Co., Ltd.
Brown, H., Limited
Calder & McDougall. Ltd.
Ford, H. J.
Gliksten & Son, Ltd.
Hall, L.
Jennings, C. & Co.
Leary, C. & Co.
Longbotham, J. & Co.
Loughurst, R. & Sons
Millar's Timber & Trading Co
Price & Low, Ltd
Priday, S.
Venesta, Ltd.

**Tyres—**
Bergougnan Tyre Co.
Dunlop Rubber Co. Ltd.
Michelin
North British Rubber Co.
Palatine

**Underlining, &c.—**
Engert & Rolfe Ltd.
McNeill, F. & Co. Ltd
Vulcanite, Ltd.
Willesden Paper & Canvas Wks.

**Ventilating—**
Boyle, R. & Son
Dargue, Griffiths & Co., Ltd.
Ewart & Son, Ltd.
Haywards, Ltd.
Keith & Blackman Co.
Kinnell, Chas P. & Co., Ltd.
Murray, S. D. & Co., Ltd.
Rosser & Russell, Ltd.
Sturtevant Engineering Co. Ld

**Wall & Ceiling Coverings—**
Beaver Board Co., Ltd
Fiberlic
Machin & Kingsley, Ltd
O'Brien, Thomas & Co.
Thames Mills (Calne)
Venesta, Ltd.
Young & Marten Ltd

**Waterproofing—**
Adamite & Co., Ltd.
Callender, G. M. & Co.
Ebner, J. F.
Kerner-Greenwood & Co. (Pudlo)
Super Cement, Ltd.
Titon (Liverpool) Ltd.
Torbay & Dart Paint Co.

**Wine Bins (Iron)—**
Bayliss, Jones & Bayliss, Ltd.
Farrow & Jackson

**Wire Screens—**
Johnson Clapham & Morris, Ld
Moriarty & Co. (1911) Ltd.
Parker, Winder & Achurch

**Window Frames & Sashes**
Braby, F. & Co Ltd.
Carron Company
Clark, Hunt, & Co. Ltd.
Crittall Mftg. Co., Ltd.
Hayter, Ltd.
Haywards, Ltd
Williams & Williams, Ltd.

**Wood Flooring—**
Acme Flooring and Paving Co.
Ebner, J. F.
Improved Wood Pavement Co.
Turpin's
Zeta Wood Flooring Co.

**Wood Preservative—**
Fuller, John H. & Co. Ltd.
Maclean Wm. Sons, & Co.
Major & Co., Ltd.
Reparo, Ltd.
Sterns, Ltd.

# THE BUILDER

*A RECORD OF ARCHITECTURE AND CONSTRUCTION.*

WITH WHICH IS INCORPORATED THE "BRITISH ARCHITECT."

VOL. CXIX.—No. 4056. OCTOBER 29, 1920

## TIMBER AND THE PROFITEERING ACT.

IN our issue for October 15 we gave a *résumé* of the findings of the Sub-committee appointed to investigate and report on profiteering in timber. At the beginning of 1917 Government control was put into operation through an A.C.I., and all stocks of magnitude were commandeered in the early summer at prices ruling at the beginning of that year. As prices naturally rose considerably, profits were next limited to 10 per cent. on prices ruling in January, 1917, plus one-third. This was not found sufficient, as costs increased and stimulated the market in home-grown timber, which was not subject to restrictions. This, again, gave rise to restrictions in home-grown timber, and finally purchase of foreign timber was prohibited, and no timber except for national use was available without a permit. Early in 1919 drastic reductions in the price of timber to users was decided upon by the Timber Controller, and goods were sold by the Government at a considerable loss from stock purchased at more expensive periods, not from lack of demand at higher prices, but to benefit the user. The stock, about 400,000 standards, was, very properly, disposed of through the timber trade. The result was illuminating. Sold at first below market rate, we are told that in spite of a restriction on re-sale above a certain price, presumably leaving a fair profit, this restriction was evaded, sellers putting into their own pockets money intended to be saved to the user. The result was that the Government eventually sold the rest of the stock at market rates. The Sub-committee considers that the present high prices are largely attributable to this Government action, but the main Standing Committees on Profiteering do not endorse this view. Although we think that the sale at market rates was in itself undesirable, it is difficult to see how the rapacity of the individuals who caused this action could have been defeated in the case of a material the identification of which after sale is well-nigh impossible. We presume that direct sale in very small lots would have been impracticable, and experience shows that such transactions by Government departments are not economical. The Sub-committee is, of course, not concerned with the larger view which involves some general saving to the taxpayer by the sale of Government surplus at a profit. If this profit had been turned into a loss we imagine that most of the money would have remained in the pockets of the intermediaries between the Government and the user, who would have seen to it that prices did not fall in proportion to the increase in supply.

That we are not unfair would seem to be shown by the fact that though there is now plenty of timber in the country, the docks being crowded and transit conditions much easier, prices are still extraordinarily high. We fear that the truth of the matter is that the trade—and our contention is not confined to the timber trade—is holding on to the old inflated prices to the last, but one can carry things too far. Freightage of Scandinavian timber to London docks is now £9 12s. 6d. per standard, as against £17 5s. in 1918, and conditions generally are such that a substantial reduction in price might be looked for. It would be better to sell even at a small loss after a time of great profits than to hold on till the market breaks. It would seem that the only way after all is the old one to which we have so often referred, and that is to check demand till terms become reasonable. Supplies must then pile up, and no trade can exist with capital locked up indefinitely. Of course, steps may be taken to reduce supplies and thus keep up prices. This is a short-sighted policy and will lead, as high prices have already led, to the wider use of timber substitutes, which are gaining ground in many directions. It does not really pay to squeeze our fellow men; we want them alive, not pushed out of existence, and the only sane way of obtaining national prosperity is to live and let live, and to encourage production, which means cheapness for everybody. The report tells us that merchants' profits generally are now the same percentage as pre-war on a cost of timber which shows 259 per cent. increase. This is a good deal more than many of us enjoy, and though, of course, there have been great difficulties to contend with, increased costs are passed on to the consumer.

We are told that no evidence exists of any trust or combination so far as importers and merchants engaged in the wholesale trade are concerned, and we congratulate the trade on this finding. We feel, however, that a condition of things which to-day increases the merchants' profit from 25s. to 30s. per standard to £5 to £6 needs explaining. Agreements among yard-keepers in provincial towns fixing local prices are said to exist, but no such agreements seem to exist in London. While no trusts are alleged among importers and merchants, particular attention should be drawn to the combination of Scandinavian shippers who, composed of Swedish and Finnish firms, are said to control f.o.b. prices of timber, and to have far-reaching powers of affecting prices. It will be a long time before the Russian trade can again enter as a competitor in this field, hence it is very desirable that every source of home-grown and Colonial timber should be explored so that this combination may be kept adequately in check by alternative markets. More than a million loads are cited as imported from Canada in 1919, and we hope that this increase from our own Empire is not a mere indication of abnormal times. Freightage, of course, is against long distance transit, and the Report quotes rates no less than 775 per cent. over those of 1914. Though the old rates will never return, the position in the shipping world is now so much improved that healthy competition for cargo may soon be expected.

At the present moment, of course, the dark shadow of coal difficulties is bound to delay the return to normal conditions; nevertheless, we look to the future with some confidence and to those engaged in the timber trade to assist users and ultimately themselves by adopting prices in conformity with supplies. There are doubtless faults on both sides, and the Report has a word on the assistance which could be given by adopting alternative sizes for much work. We think that architects might assist in this matter by so framing their specifications that timber required should be more readily obtained and cutting to waste be avoided. The Report points out that the enhanced timber prices in this country caused Swedish shippers to raise their prices and made a combine among them an easy matter. Were the trade here to resolve to lower prices and clear the docks for new material which would come in at lower freightage rates we have no doubt that these shippers would not take long to come into line. What we all have to learn is that the method of passing on costs to the consumer has its limits, and that those limits have now been reached. Any further increase, or even the maintenance of the present high prices, merely means checking the demand, which will not help anyone, and is, of course, nationally disastrous. On the other hand, the encouragement of consumption means stimulation and outlet for production and employment for everyone.

# NOTES.

**Is the Architect to be Envied?**

The new session of the Schools of Architecture and the Architectural Societies has now begun, and this week we give reports of the opening meeting of the Architectural Association and the Manchester Society of Architects, as well as a report of the opening of a new studio for the senior students of the Liverpool School of Architecture by the Rt. Hon. H. A. L. Fisher, M.P., President of the Board of Education. Mr. Fisher's observations will be read with interest, but his confession that he always envies an architect will be received with mixed feelings. The competent, successful architect may well be envied, but there are others who are, perhaps, in no sense competent, though they may be very successful, while there are those who may fairly claim the title of architect in the best sense of the word who seem to miss the rewards which are their due.

**The Architectural Association Meeting.**

The Architectural Association is justly known for its progressive activities as well as the thorough and practical character of its educational work, and it is to be congratulated on the new form its monthly meetings are to take. The proceedings are to be opened by an informal dinner, following which the real business of the evening is to be taken, and judging by the attendance on Monday the experiment, which will be watched with interest, is likely to be a success. Sir Edwin Lutyens was the principal speaker, and acting on his suggestion questions were put to him which he answered at once with great ability and wit. His advice to students not to copy old buildings, but to see them and then draw them to scale from memory, afterwards measuring the buildings to see how far the drawings are correct, follows similar good advice recently given by Sir Aston Webb.

**Brightening Up London.**

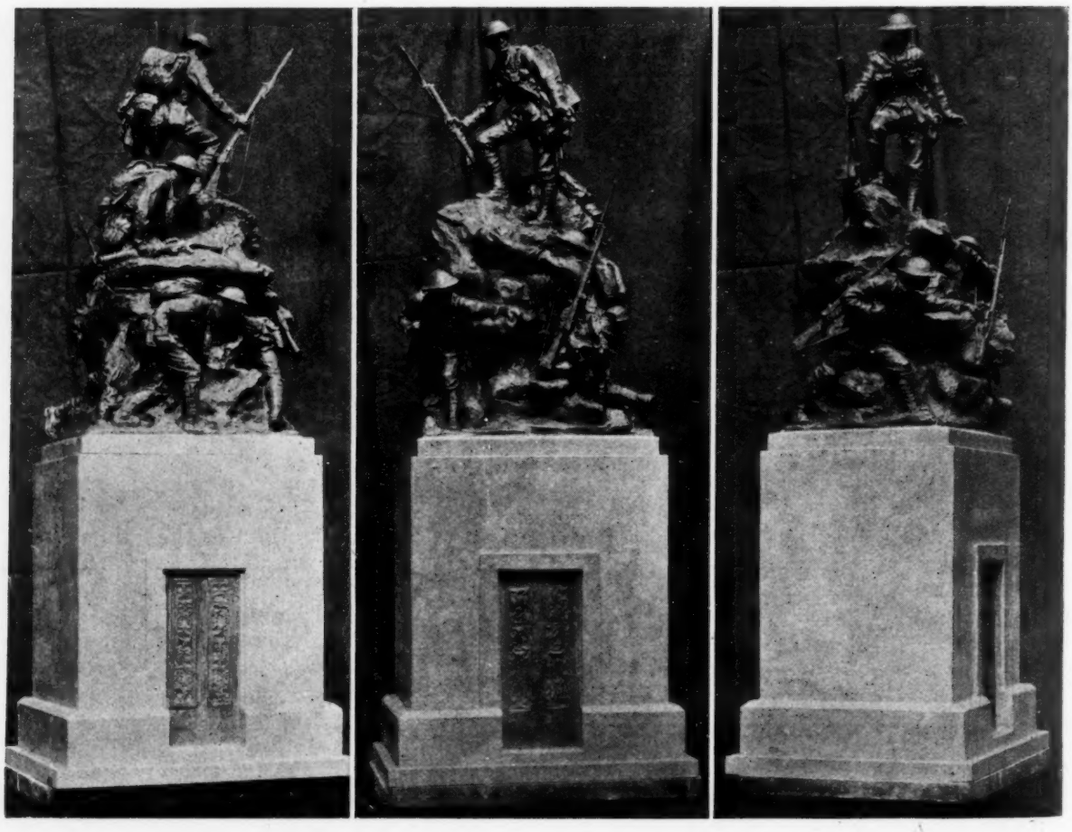
The brightening up of our streets might be readily accomplished if a little good advice were taken about it by those who own or occupy buildings. We have before us the example of the Athenæum building in Waterloo-place finished in grey and white to show how our buildings might be brightened and refined. If the corresponding blocks at the angles of Waterloo-place were similarly treated we should have a distinctly pleasing and dignified effect in one little patch of London town-planning which has a really good quality.

**Lost Opportunities.**

If the imagination of Londoners could be awakened by anything one would think that the possible opening up of the Mall to Trafalgar Square would have done it, but we are now preparing to block out for good and all one of the best chances which has ever befallen to create a fine environment about Trafalgar Square.

**A New Industrial System**

We are glad to publish Mr. Malcolm Sparkes's letter on the Building Trades' Parliament, and to note the admirable spirit that pervades it. The work of the Industrial Council for the Building Industry has been watched with great interest, as from it much has been expected, and in spite of differences which are known to have arisen amongst its members, we believe it is carrying out valuable work which will be of lasting benefit to the industry. Some of the proposals which have been under discussion by the Council are of a drastic and even a revolutionary character, and, as Mr. Sparkes says, there is probably no other Industrial Council in the country that could have stood such a test without a breach. Whether we agree with him or not, it is certain that the proposals he refers to will give rise to much discussion and disagreement, and though he is convinced



**Oldham War Memorial.** Mr. Albert Toft, Sculptor. (*See page* 480.)

that the true road of industrial advance lies in the development of two distinct types of proposals, *i.e.*: (1) "The Universal Code for the whole industry, embodying plans upon which there is a large measure of agreement, and put into operation, when approved, by the affiliated organisations," and (2) "The Voluntary Code for plans that require to be tried out before general adoption," we would like him and those who agree with him to see that it is just these plans that "require to be tried out" that appear to justify the belief that one section of the Council is in favour of Utopian schemes which pay no attention to the basis upon which human nature is constructed. While we do not wish to discourage any discussion likely to lead to industrial peace, we think that some of the time devoted to the consideration of what appear to be Utopian schemes might with advantage be given to the practical proposals outlined by Major Pells in the articles now appearing in our columns.

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**Payment by Results.**

The exposure of the evils of our present control of work by Lord Weir is very timely. He says: "Payment by results gives to the capable willing worker the opportunity to profit by his capacity and skill, and calls attention to the slacker and mediocre worker." He said the mediocrity was protected by his trade union, which insisted on his being paid the district rate whether he earned it or not. It might be perfectly legitimate to decline to work under specified conditions, but it could not be legitimate to prevent others working under these conditions if they were satisfied with them. We could point to many workmen who are skilfully and honestly doing their best and fairly earning the high wages they are being paid, but can it be fair to the public that indifferent or lazy workers should be paid the same wages? Can right economic law be satisfied whilst the same wage is being paid for laying 1,000 bricks a day as for 400? The whole foundation of commercial life is undermined by the vicious system of workmen's payments under which we live, and this, forsooth, when the community is implored to buy housing bonds to provide charitable homes for workmen! In the very project where it is essential to buy in the cheapest market we are compelled to pay a flat rate for good and bad alike, when a really good output of work would be invaluable to the nation. Well does Lord Weir point out how farcical and insincere is the state of affairs to-day. Whilst we are so urgently in need of more houses, men available to build them are walking about unemployed because employment is not free. And we are actually starting relief work for unemployed!

**The Belgian Memorial on the Embankment.**

This memorial, the gift of the Belgian Government in gratitude to England, is quite successful enough to cause us to regret the lack of co-ordination between the parts, and it is a pity that in the carved heraldic medallions on the walling behind this should have been neglected. These should have been executed in consultation with the sculptor, in which case no doubt a more robust treatment and emphasis of light and shade would have been imparted to them. In the atmosphere of London these weak and rather "finniky" low reliefs will in no great length of time probably become undiscernible. It appears to be an instance, of which there are so many, of the loss sustained through want of sensible co-operation between craftsmen, and it is the greater pity because the statuary has considerable merit and suffers from a defect which is injurious to the unity of the whole. We do not know whether the architecture was carried out independently of the bronze group, but it is a case in which it should have been made to conform, and the weak relief work on the walling behind has no relation whatever to it.

**War Memorial at Carpenters' Hall.**

SIR BANISTER FLETCHER, F.R.I.B.A., Architect.

[This memorial has been erected to members of the Carpenters' Company who fell in the war, and was unveiled by Field-Marshal Earl Haig on July 28. The memorial, which measures 7 ft. 3 in. high by 3 ft. 8 in. wide, is executed in wainscot oak, and consists of a tablet containing the names of the fallen in raised gilded letters. Beneath is the official military badge enclosed in a wreath of laurels. On either side of the panel are decorative pendants, while above is the pediment containing the arms and motto of the Carpenters' Company, executed in proper heraldic colours. The memorial was executed by Messrs. Gilbert Seale & Son.]

# GENERAL NEWS.

### The President of the R.I.B.A.

Mr. John W. Simpson, President of the Royal Institute of British Architects, has just returned from Egypt after completing his mission on behalf of the Egyptian Government in connection with the new Quasr-el-Aini Hospital at Cairo.

### The Royal Institute of British Architects.

The Royal Institute of British Architects will hold the opening meeting of the Session of 1920–1921 on Monday, November 1, at 8.30 p.m., when the President, Mr. John W. Simpson, will deliver his Inaugural Address. The vote of thanks to the President will be moved by the Right Hon. the Earl of Crawford and Balcarres an Honorary Associate of the R.I.B.A.

### The Royal Academy of Arts.

The following lectures are to be delivered at the Royal Academy of Arts during November by Professor A. P. Laurie, D.Sc. :—November 10, Methods of Painting as illustrated by Magnified Photographs of the Brush Work of Romney and Hobbema, and other Portrait and Landscape Painters; November 11, Modern Pigments: Their Selection and Use; November 12, Painting Media: Oils, Varnishes and Tempera; November 15, Methods of Wall Painting; November 16, The Theory of Colour and its Application to Painting; November 17, The Nature and Properties of Building Materials, New and Old.

### Proposed New London Roads.

It has been decided, partly to provide work for the unemployed during the coming winter, to construct four new thoroughfares in North-east London, the new roads to be planned jointly by the Ministry of Transport and the London County Council. The scheme is to be carried out without the demolition of any existing buildings, and is to be paid for equally by the Government and the London County Council. The proposed new roads are as follows :—(1) East Ham—Beckton-road, Barking, Dagenham; (2) "Eastern-avenue" — Hackney, Leyton, Wanstead and Ilford; (3) "New Cambridge Road" — Tottenham, Edmonton and Chesbunt; (4) "North Circular Road"—Edmonton, Chingford, Walthamstow, *via* Lea Marshes.

### The Professional Classes War Relief Council.

Lord Phillimore presided recently at a conference of representatives of professional institutions and benevolent funds and other bodies in touch with the professional classes, when it was reported that the Professional Classes War Relief Council had decided upon a scheme of reconstruction in order to become a permanent body for dealing with post-war distress among professional men and women and others of the more highly educated classes. The Conference supported this action and a resolution was adopted urging all bodies in touch with the professional classes to recognise the Council and to avail themselves of its services when likely to be of use.

### The London Society.

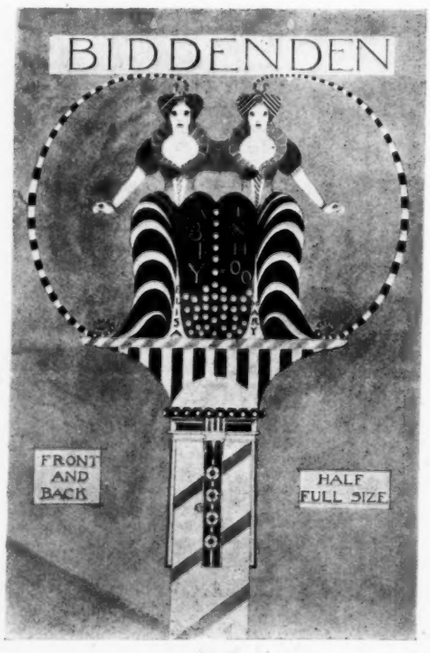
The programme of the London Society for the Session 1920–21 includes the following :—Friday, October 29, Monsieur Louis Bonnier on "L'Extension de Paris," at 4.30 p.m.; Friday, November 12, Mr. C. H. Hopwood, F.S.A., on "The Tower Quarter of London," at 4.30 p.m.; Friday, December 10, Mr. W. Y. Lewis on London's Traffic Troubles and Their Possible Solution by Continuous Systems," at 4.30 p.m.; Friday, January 14, Mr. C. Clark on "Dickens' London," at 4.30 p.m.; Friday, February 11, Mr. S. Wilson on "The History of the Houses of Parliament," at 4.30 p.m.; Friday, March 11, Mr. T. G. Gibbons on "Zoning and Town Planning," at 4.30 p.m.; Friday, April 8, Miss N. March on "London Development in Relation to Health," at 4.30 p.m. The meetings will be held at 18, John-street, Adelphi, W.C. 2.

# WAR MEMORIAL, OLDHAM.

THE memorial illustrated on page 479 designed by Mr. Albert Toft, is to be erected in Market-place, Oldham, to the memory of those who fell whilst serving in the 1st/10th Battalion of the Manchester Regiment (The Oldham Territorials) and the 24th Battalion of the same regiment. Mr. Albert Toft's design was unanimously recommended by the Executive Committee, and the General Council of the War Memorial Fund at a meeting on October 13 unanimously approved the design.

The scheme takes the form of a large group of five figures in bronze on a squarely-constructed base of granite. The group shows the men coming out of their "dug-outs," some climbing; whilst on the top their leader beckons them on. The total height of this group would be about 12 to 14 ft. (each figure, if standing upright, would be 7 ft. or 7 ft. 6 ins. in height). The width of the bronze group at the base would be about 8 ft. 6 ins. by 6 ft. 6ins. In his report Mr. Toft suggests that the granite base might be used as a sacred chamber wherein the names of all who gave their lives in the war would be inscribed, either on marble or bronze panels, or other material, and placed on the inside walls. The inside decoration should be made as beautiful yet as simple as possible, and perhaps shelves could be arranged around and below the panels, upon which could be placed flowers, trophies, &c. This chamber should be approached through a bronze door or doors, enriched with symbolical panels, wrought in or on them. The gates or doors might be religiously opened at a certain hour each day, and closed at the end of the day. The chamber should be lighted by electricity and ventilated.

The design is simple and severe, with little more on it than "1914–1919—Mors Janua Vitae—"Death is the gate or door of life" (*i.e.*, everlasting life). The size of the base or pedestal to be approximately 12 ft. 8 ins. high, 11 ft. 8 ins. wide by 9 ft. 8 ins. deep. To be in unity, perhaps two doors should be introduced, one at each side. The centre two doors might serve, one as an entrance and the other an exit.




**Design for Village Sign :** By MR. C. H. LAY.

[The village signs illustrated on this and the following pages were awarded premiums of £50 each in the recent Village Signs Competition.]

# COMPETITION NEWS.

### York.

Messrs. Walter Tapper, H. V. Lanchester and Robert Atkinson, FF.R.I.B.A., the assessors, have awarded the premiums in the competition for a memorial in York Minster to the members of the K.O.Y.L.I. who fell in the war, as follows :—

First.—Mr. Chas. F. Annesley Voysey.

Second (Premium 25 guineas).—Mr. T. Frank Green.

The following are bracketed equal, and awarded 15 guineas each.—Mr. Wilfrid Bond, Mr. Clement W Jewitt, Messrs. Leonard Stokes, Drysdale & Aylwin, and Messrs. Whiteing, Reynolds & Hill.

The drawings will be on exhibition at the premises of the Society of Architects, 28, Bedford-square, W.C. 1, from November 1 to 6, between 10 a.m. and 5 p.m.

### Frodsham.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a war memorial. Sending-in day, October 30. (See our issue for October 1.)

### Brechin.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a war memorial, at a cost not exceeding £1,500. Sending-in day November 1. Further particulars from Mr. T. M. Guthrie, Royal Bank of Scotland, Brechin.

### Lockerbie.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a war memorial, to cost £2,000. Sending-in day, January 31, 1921. Further particulars from Mr. David McJerrow, Town Clerk, Lockerbie.

### Public House Competition.

FOR THE WORSHIPFUL COMPANY OF BREWERS.—Designs for an improved public house. Sending-in day, January 31, 1921. (See our issue for October 1.)

### Gateshead.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a cenotaph in grey granite. Approximate cost, £4,500. Sending-in day, December 1. Further particulars from Mr. George Gill, West-street, Gateshead. The Competitions Committee of the Royal Institute of British Architects call attention to the fact that the conditions of this competition are unsatisfactory, and advises members to take no part in it until the conditions have been revised.

### Liege.

FOR THE PROVINCE AND TOWN OF LIEGE.—Designs for a war memorial. Sending-in day, December 1. (See our issue for October 1.)

### Glasgow.

FOR THE CORPORATION.—Designs for a high school. Sending-in day November 15. (See our issue for October 1.)

### Lisburn.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a war memorial, cost not to exceed £1,100. Premium, ten guineas. Designs to be sent to the Hon. Secretary, War Memorial Committee, Town Hall, Lisburn, by November 1.

### Llandudno.

FOR THE WAR MEMORIAL COMMITTEE.—Dseigns for a war memorial, to cost about £1,200. Sending-in day, December 1. Further particulars from Mr. A. Conolly, Town Hall, Llandudno.

### London Improvements.

In order to provide work for the unemployed during the coming winter, a Special Committee has recommended the London County Council to proceed with several improvement schemes as soon as possible. These schemes include the expenditure of the following sums :—Parks and open spaces, £225,000; street widening and tramway reconstruction, £265,000; sewerage, £1,180,000; bridges and embankments, £71,000; housing work, £3,000,000; and road construction, £200,000.

# CORRESPONDENCE.

### The Building Trades' Parliament.

SIR,—At the time of the August meetings of the Industrial Council for the Building Industry, the Press declared right and left that irreconcilable differences had arisen and were endangering its very existence. Many of the members undoubtedly shared these fears—some even going so far as to say that the whole thing was played out. But I am venturing to write this letter because I hold a very different view, and am hopeful that it may possibly be of some service.

During the last two years of the Council's existence it has been my privilege to serve on one of its Committees, and although not actually a member I have been able to keep in fairly close touch with its work—and perhaps it is just because I am somewhat outside it that I see how great it is and how comparatively unimportant its shortcomings. For two years we have been watching the building industry, through its representative assembly, quietly setting its house in order. We have seen it tackle some of the most formidable industrial problems and reduce them to soluble proportions. We have followed, with ever-growing hope, the frank discussion of big ideas presented by men who know their industry from top to bottom, and have watched the formation of industrial opinion proceeding at a speed that has no parallel.

But it is only within the last twelve months that the really fundamental issue of industrial control has been brought up for discussion. Vast programmes of reorganisation involving full unemployment pay, a new status for employers, and a new conception of the industry as a self-governing public service, have been laid before the Council and the Council has not broken under the strain. There is no other Industrial Council in the country that could have stood such a test without a breach. It is an unprecedented achievement which speaks volumes for the honesty and courage of the members, and throws a great beam of light across the chaos of this time. What happened last August was merely a momentary jumping of the rails. The Council resolved itself temporarily into a sort of conciliation board discussing a proposal as if it had been demanded of one side by the other. The true function of the B.T.P. (as I see it) does not resemble in the least degree the function of a conciliation board. It is a great clearing-house for ideas—a representative assembly set up expressly to develop a new and better industrial order by the fearless discussion of proposals on their merits. It rests upon the unquestionable certainty that the best people to put industry right are the people who carry it on, and not the State, the municipalities, or the consumers.

I am still convinced that the true road of industrial advance lies in the development of two distinct types of proposals—the universal code for the whole industry, embodying plans upon which there is a large measure of agreement, and put into operation, when approved, by the affiliated organisations; and the voluntary code for plans that require to be tried out before general adoption.

The National Guild scheme that is to come up for discussion on November 11 and 12 (Management and Costs Report, Appendix 2) is a case in point. The promoters of this proposal believe that, rightly planned, it is big enough and fine enough to attract a voluntary nucleus of pioneers if discussed frankly on its merits, without any demand for its acceptance. They are content to accept this supreme test. The plan is essentially constructive. It does not attempt to destroy anything or anyone, but calls for volunteers from every grade of the industry, believing that there are men who will take risks gladly in the doing of one of the greatest tasks that has ever been attempted—the building of a new industrial system based on service instead of gain. Even employers who are honestly opposed to it have declared themselves in favour of its full discussion.

In such an atmosphere all things are possible. The assembly may, of course, break up, but that would merely be a "failure of human wisdom." The eyes of the world are upon it now. If it hold together it will surely prove to be one of the swiftest and most scientific instruments for orderly industrial development that we have ever known.

MALCOLM SPARKES.

The Guild of Builders (London), Ltd.,
72, Oxford-street, W. 1.

### Military Service Architects and Medical Officers.

SIR,—The letter of Mr. Percy Bartlett, M.S.A., on the above subject is both interesting and true. Undoubtedly there are many middle-aged architects who, disregarding their own prospects, joined the Army and found on their return that men, often with less experience and fewer domestic responsibilities, had, during their absence, obtained position and preferment to their exclusion.

This was particularly the case with the housing schemes. One found comparatively young men, many of whom ought to have been in His Majesty's Services, comfortably ensconced in important positions, "assisted" by these men of greater patriotism and ability whose brains were being exploited, as they were faced with a subordinate position and a weekly pittance, or starvation. According to report there are even cases now where the "conscientious objectors" have been appointed by local authorities, with the full approval of the Ministry of Health, to deal with the greatest problem the war has left us, that of supplying homes for those who fought for them. A still greater irony is the contrast of their professional and financial position and stability. One would not suggest for a moment that war service makes a man an architect, but only that when the choice lies between two men of otherwise equal qualifications it should be the determining factor. The Government "weeding out" process is certainly slow, but we hope is sure, even in its own offices. What apparently happens is to ask for the resignation of men without service, placating them by the offer of a less prominent but equally lucrative post. Probably this departmental nepotism is quite unknown to the "Chiefs."

In the case of architects a great deal of trouble is made by the R.I.B.A. and S.A. themselves. Although much progress has been made of late years towards a universal system of recognition, so far their operations seem to be largely limited to their own members, with particular regard to those on the spot in London. There have been and are now many architects who gained distinction in open competitions, &c., before the Societies became recognised to their present extent, who were undoubtedly leading architects and yet were never members. The generally recognised hall-mark is a great safeguard to the public, but is useless unless universal. The same difficulty faced the Medical Society about 1820. The remedy was amalgamation. The present situation is on similar lines; a diploma should be granted at once to men of sufficient practical experience.

It is not essential to insist upon technical examinations in cases of well proven efficiency. It is impossible to effect this with rival societies each representing a different standard: one body only is required, which will embrace the whole of the profession, membership being acquired by examination in the future, and this to be the only qualification for practice. If all architects are compelled to be enrolled in a general society with the same powers of ratification as are held by other professional societies, preference to public appointments can be given in the right quarter on occasions, such as at the present time to the ex-Service man for his rehabilitation.

W. HILTON.

### Government Subsidies.

SIR,—For your information I give below particulars as to a bungalow which has been erected in this district, and in connection with which Certificate "A" and, possibly, by now, Certificate "B," has been issued by the Ministry of Health over the head of my authority.

(1) Plan was submitted for erection of a timber-framed bungalow to have the framing of 2 in. by 2½ in. studs covered externally with rebated weather-boarding and internally with asbestos sheeting.

(2) The Council consented to the erection for a period of ten years (subject to revision at the end of that period).

(3) Subsequently owner applied for Government subsidy.

(4) The bungalow was erected, but the specification attached to the plan was not carried out, the external framing being of 2 in. by 2½ in. studs placed anything from 12 ins. to 22 ins. apart, lined inside and outside with asbestos sheets. The spaces between these sheets were to a height of 7 ft. filled in with breeze concrete dropped in from the top Owing to braces and ties, there are several spaces not so filled in. External joints of asbestos sheeting are covered with battens and the external face of the asbestos sheeting is treated with distemper.

(5) The building, as completed, does not comply with the Ministry's Standard Specification as to other minor points, such as corner posts, size of rafters and hips.

(6) The above facts have been pointed out to the Ministry, who state that the bungalow was built to specification and plan issued by the Ministry in December, 1919, before Specification D 139 was issued; and that, although it should not be regarded as a precedent, it would be an injustice to the owner to refuse to issue Certificate "A," and they have, therefore, issued it over the head of the local authority.

(7) It has been put to the Ministry that to allow a Government subsidy on a building of this kind is gross waste of public money, and that the facts will be published in the Press.

(8) The plan referred to by the Ministry of Health is dated October 30, 1919, and the specification is undated, and on neither is there any mention of subsidies.

I should like to know whether other surveyors to local authorities have met with a similar experience, and also what is their opinion as to the method of construction described above.

C. TURTON.
*Engineer and Surveyor,*
East Grinstead Rural District Council.

**Design for Village Sign.**
By MR. C. G. AMBLER.

# THE ARCHITECTURAL ASSOCIATION.

## EXHIBITION OF MASTERS' WORKS.

One does not often see a more interesting collection of sketches than those now exhibited at the A.A. by the past instructors in the School. A considerable variety of method is shown, and there is nothing which fails to reach a good quality of one sort or another. As a direct and adequate study of architecture we have a cloister sketch by L. H. Buckneli, a dainty landscape study by H. C. Bradshaw, who has also other charming water colours, an excellent decorative panel representing Labour by H. Davis Richter, a refined decorative interior by the same artist, two or three excellent water colour landscapes by H. F. Waring, admirable broadly treated landscapes by S. Rowland Pierce, a variety of clever studies by H. M. Robertson, and several interesting things by H. F. Keesey, T. B. W. Champneys and L. N. Bucknell. If work like this represents the pleasure to be gleaned from leisure moments, we can only hope that these artists will find a great deal of leisure.

## GENERAL MEETING.

The first General Meeting of the Session 1920–21 was held on Monday last, the President, Mr. G. Gilbert Sott, in the chair. In accordance with the new form which these meetings are to take this session, the proceedings opened with dinner, to which some 140 sat down.

### Election of Members.

After dinner the President announced that the following new members had been elected :—Messrs. C. A. W. Burgess, P. W. Cutler, D. F. Martin-Smith, C. S. Morley, C. H. Crickmay, L. S. Slaughter, Arthur J. May, William Small, John S. Foxall. The President also announced that 67 nominations for membership had been put forward.

### "An Informal Talk" by Sir Edwin Lutyens, A.R.A.

On being called upon by the President to address the meeting, Sir Edwin Lutyens said he had not expected such a large gathering and was not prepared to give an address on any definite subject. He commenced by telling one or two excellent stories, and afterwards suggested that it might be of assistance to the students present if he were to answer any questions which they might like to put to him. From amongst the replies to these questions we take the following :—

Architectural Education.—He advised students not to copy old buildings, but to see them and then draw them to scale from memory, afterwards measuring the buildings to see how far the drawings were correct. They should make a design every day, as only by making designs could an inventive mind be attained. He urged students not to be too practical in their work. They should not load themselves with practical facts during the early part of their training, but should pick them up one by one; also they should not learn too many formulæ at once. In actual practice they would have to be practical, but that would come automatically without bothering about it.

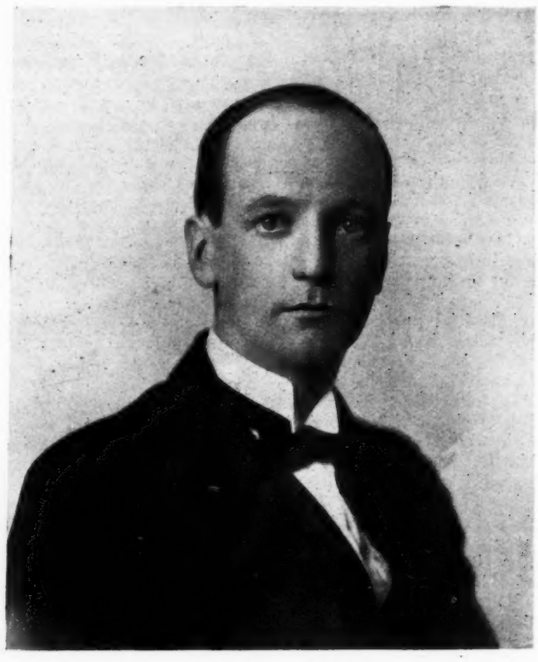
War Memorials.—He said that Lord Rosebery's suggestion that the war memorials should consist of pulling down the monuments erected in memory of the Boer War was a good one.

High Buildings for London.—With regard to the erection of high buildings in London, he said he thought the higher they were built the better, and there should be no restriction on their height. It was a problem that had to be met, and it would give great opportunities to architects. Also speaking on the subject of high buildings, Mr. G. Gilbert Scott said London buildings looked petty after a visit to New York, and made one feel that five blocks of London buildings should be swept away and one big building erected in their place. In London, however, a lot of "skyscrapers" would not be suitable, but blocks of high buildings erected in certain places would be very effective. One objection to "skyscrapers" when erected close together was that a view of the whole building could not be obtained. In parts of Wall-street, New York, very little but the basements of the buildings could be seen when one was close up to them without looking directly upwards, and then only rows of windows, with not much of architectural interest in them, could be seen. If, however, the "skyscrapers" were erected on sites where they could be seen at a distance the effect might be very fine.

Design in Colour.—With regard to interior colour decoration, Sir Edwin said, he thought white was the best colour to use, as there were more shades of white than of any other colour. In one scheme he was carrying out white peacocks were being painted on a white background. He did not think exterior colour decoration suitable for London buildings without they were expressly designed for it. Painters were absolutely divorced from architecture, and were only accustomed to the easel picture. Every architect ought to get a painter to work with, and in the decoration of rooms the painter should carry out the whole scheme under the architect. There should, however, be no division between the arts of architecture, painting, and sculpture, and he thought the Royal Academy Schools were going on the right lines in training students for all three in the same classrooms.

Engineering and Architecture.—He would like to see the Architectural Association more closely allied to the engineering societies: that would be useful all round, and he had no doubt the architects would be able to teach the engineers something.

A hearty vote of thanks to Sir Edwin was moved by Mr. Curtis Green, and passed with acclamation.



**Mr. G. Gilbert Scott, A.R.A., F.R.I.B.A.**
President of the Architectural Association.

**Design for Village Sign.**
By Mr. Thomas. A Cook.

## MEETINGS.

Friday, *October* 29.

*The London Society.*—Monsieur Louis Bonnier on "L'Extension de Paris." At 18, John-street, W.C. 4.30 p.m.

Monday, *November* 1.

*Royal Institute of British Architects.*—Presidential Address, by Mr. John W. Simpson. At 9, Conduit-street, W.1. 8.30 p.m.

Tuesday, *November* 2.

*L.C.C. Central School of Arts and Crafts.*—Mr. S. B. K. Caulfield, F.R.I.B.A., on "Our Houses." At Southampton-row, W.C. 3.30 p.m.

Wednesday, *November* 3.

*Glasgow Institute of Architects.*—Mr. J. Wilson Paterson on "Preservation of Ancient Monuments." At 21, West George-street, Glasgow. 8 p.m.

*British Museum Lectures on Ancient Architecture.*—Sir Banister Fletcher, F.R.I.B.A., on "Greek Architecture (B.C. 4000–146)." At the Assyrian Saloon, British Museum. 4.30 p.m.

# LIVERPOOL SCHOOL OF ARCHITECTURE.

## Visit of the President of the Board of Education.

THE RIGHT HON. H. A. L. FISHER, M.P., President of the Board of Education, visited Liverpool University on October 22, with the primary object of opening a large new studio for the senior students at the Liverpool School of Architecture. Dr. Adami, F.R.S., Vice-Chancellor, occupied the chair, and called upon Professor C. H. Reilly, Professor of Architecture at the School of Architecture, to make some preliminary remarks.

PROFESSOR REILLY said that he had some difficulty, as an architect, and as one responsible for training one hundred and fifty young architects, who had to earn their living in one of the most precarious professions, in asking Mr. Fisher, or anyone else, to open a studio for which the University of Liverpool, in one of those fits of false economy which public bodies, even the most distinguished, sometimes indulged in, had not employed an architect to design or superintend the erection of the building. The falseness of this economy would soon be brought home to the University by the number of drawings spoiled by the already leaking skylights. However, apart from this, the School was very glad to have a new, large, airy room in which to prepare their Rome and other important drawings. If the students of the Liverpool School managed to be as successful as they had been in the Rome Competition, when their drawings had to be made in dark cellars and back bedrooms, it was to be hoped they would continue their success now they had plenty of light and air in which to work out their conceptions. Mr. Fisher had dealt elsewhere with the happiness attending the university career of the ordinary arts and science students, and he (Professor Reilly) desired to point out that the architectural students were in a still happier state. They now spent their five years in the School passing from one design to another, enjoying all the time the pleasure of creative work until in their fourth and fifth years they found themselves engaged on schemes which must make a tremendous appeal to their imagination, and bring them a happiness which it might not be their luck to equal in later life. "Just think," he said, "for a moment of some of the recent designs the fourth-year men have been engaged upon:—a National Theatre, a Palace of Justice, Houses of Parliament, and now a great National Pantheon with a dome of enormous size, set in the midst of a lake, with a low causeway leading up to it along which the funeral cortège slowly crept." The difficulty was to keep men out of the studios, not to bring them in. Where there was a vigorous School of Architecture like that it was the duty of the University to see that it was placed with regard to staff and equipment on the same footing as the other great professional schools, such as those of medicine and engineering. Instead of one professor with a group of lecturers there should be a group of independent professors to form the jury on all competitions, and, more important still, to secure the continued life of the School. "While I have the finest group of lecturers in the University," continued Professor Reilly, "who have, like Mr. Budden and Mr. Cole, grown up with me from the student stage, I feel that such men should now be permanently secured to the University by the establishment of further Chairs of Architecture. In this way the life and point of view of the School are secured—the individual passes, but the group remains. If for any reason I left the Liverpool School I should feel sure the colleagues I had left behind would select someone to carry on the same tradition and fill my place, for, after all, one of the main objects of a school of architecture, beyond the actual training it gives to students, is to create and make permanent a tradition of its own. It is my ambition and the ambition of all the teachers here that gradually the methods of drawing and design, the methods of approach to problems which are employed in the School, should everywhere become recognised as the Liverpool methods, just as other schools may develop their methods and gain recognition. I hope that some day the Liverpool School may be spoken of in the same way as we now speak of the great Italian schools of architecture and painting attached to the names of towns where their masters practised."

In the course of his remarks, MR. FISHER said that a century ago it would have been thought a very strange thing for any University to have an architectural department. Mr. Pecksniff, he said, used to give instructions to his pupils in the famous back-room, and this programme of studies was almost as comprehensive as that at the Liverpool School—bridges, almshouses, ice-houses, churches, plans, elevations, sections of every kind of thing—but courses of academic training in architecture were not known. An American citizen once said a university was a place in which nothing useful was taught. There was a change from that now—universities taught many useful things. They prepared their students in modern universities for almost every calling and profession, and, naturally, for one of the noblest of all, architecture. He always envied an architect; he thought him of great importance. He combined so many different qualities—he was an artist, a man of business, he must know some science, and it was very well also if he could enter, as a statesman entered, with sympathy into the various practical needs to which it was his duty from time to time to minister. He did not know any other profession in which such a pleasant balance of opposite qualities was so marked. There was a great writer, an architect in antiquity, whose text-book was a classic for something like three centuries. The great Latin writer Vitruvius said that the requirements of an architect were very varied, but particularly the power to solve scientific problems. Those accomplishments were imposed upon by the character of the architect's calling. There was an old English writer, Wotton, who used to write on architecture and he contended, so far as the speaker remembered, that buildings demanded three conditions—commodity, firmness and delight. There was the demand for commodity because every building had to be adapted to a particular practical use, and it was the province of the architect to consider how to make his building best suited to that use. Architecture demanded firmness because the architect must be acquainted with the scientific law of stress and strain, and he must also be cognisant of the different qualities of the material which he had to handle. Lastly, architecture demanded delight because every building was not only required to be useful, it was not only required to be durable, but it was also required to be as beautiful as the occasion allowed.

On the other hand, he thought there was one drawback for architects, and that was the climate, the unwisdom of the climate, the whimsical fancies of the climate, all of which the architect had to study and which in effect imposed certain limits upon his design and action. Some of the wisest architects were not only architects and men of business but also diplomatists, and knew how to manage their clients. He had a friend who wished his architect to make a little balustrade to his garden. He was prepared for the sum of £400, but found himself in the end committed to an outlay of £700. See, then, how various were the powers of an architect!

The School of Architecture in Liverpool had already distinguished itself very greatly in the Prix de Rome, and it was by far the biggest school, so far as he knew, in any English university. He believed the first Chair of Architecture established in any college was in King's College, in 1804. Therefore, all th present development of architectural study was something quite new, and led to a hope that a great deal would come of it. There was very great scope for the activities of the School. There was no dearth of ugly buildings in this country which would teach them what to avoid, and in the sphere of domestic architecture there was no dearth of useful buildings which would teach them what was beautiful. He looked forward to a time when the School of Architecture in Liverpool would leave a distinct influence on buildings in that part of the world. The great towns in the north grew up in a manner which was absolutely haphazard. There was then no Architectural School or Department of Town Planning, such as there was now, and it was one of the great objects of the present generation to rebuild the north of England, or the greater part of it; consequently, he looked with very great hope to the Liverpool School of Architecture. He found evidence of its work was already beginning to appear in recent buildings in Liverpool and elsewhere.

Liverpool had one rather special advantage: it looked out across the Atlantic to America, and in America a great number of striking architectural studies had been made in the last generation. They had had great American architects, and new styles of architectural development adapted to the great varieties of climate, and he would expect that in Liverpool—well, the Vice-Chancellor had just reminded him of the very interesting fact that three of their students went to America during the last long vacation with a view to studying the architectural developments there, and that showed that Liverpool had at once seized that big opportunity. He congratulated them upon what they had done; still more did he congratulate them upon what they were going to accomplish.

A hearty vote of thanks to Mr. Fisher was then proposed by Mr. A. C. Holliday, a fourth-year student, and seconded by Miss Oversby, a second-year student, and hearty cheers were given by the assembled school.

**Design for Village Sign:** By MESSRS. W. H. R. BLACKING and C. WEBB.

# LOWER BUILDINGS FOR LONDON.

By G. Maxwell Aylwin.

Those of us who remember the old Regent-street before its ordered skyline had become distorted and twisted by modern effort can hardly fail to regret the licence under which new buildings have sprung up to a great height, killing the scale of the street and casting upon it a gloom in striking contrast to the bright sunlit pavements we knew of old, and can still find where the grasping hand of commerce has been held. A mental picture of the new Regent-street, walled in by a jumble of architecture, good and bad, and with Oxford-circus converted into an overpowering vertical tunnel, is a thought to shudder at. That beautiful stone is replacing the unworthy stucco can never compensate for the loss of proportion.

There is always the danger of losing one's head in idealism, yet it is well to give pause at any loss of beauty, for it is a symptom of disease or disorder which it is the architect's duty to diagnose—as the doctor reads the pale cheek, the faded eye and the listless figure. Even if we do not accept beauty as the dictator, sound counsellor though she be, are we really acting in the most practical and expedient manner possible in allowing our buildings to grow out of all proportion to their position, or in tolerating the loud-voiced minority who clamour for the removal of existing restrictions, and who would have buildings of a height inversely proportional, apparently, to that of their ideals? Recent controversy has given them their opportunity to make themselves heard, and the opposition has confined itself to a defence of the *status quo*, upon which the ponderous voice of officialdom has purred its approval in defence of the legislators. The direct opposition has been dumb, if existent, which induces the fear that a call at such a time for lower buildings for London will be hailed as the voice of a reactionary, if not of a madman. Yet, if this cry can be translated into a sane business proposition, it can be met only by considered criticism and fair discussion.

Let us review the whole situation. In our broader streets buildings are allowed 80 ft. in height up to parapet level with two stories in a roof of 75 deg. pitch, which amounts to much the same thing as a building as high as the width of the street, or a daylight angle of 45 deg. to the bottom of the building. In these latitudes, where for a great part of the year the sun never attains this altitude, even at noon, it will readily be seen how our pavements are despoiled of the precious heritage of sunlight, that greatest of all natural sterilising agents. This is, of course, particularly evident in the case of streets running east and west. Yet any street surely should receive its proper ration of sunlight for at least half its width during some period of the day, and to effect this it would be necessary to restrict the height of its buildings within a 45 deg. line from the centre of the street. Old Regent-street and many of the most impressive highways of London would probably be found to conform to such a rule, with the result of brighter aspect, full value for architectural effect, restful proportion and pure air, all of which qualities must surely have their commercial value. London, the centre of world commerce, is busy enough throughout its whole area, but a seething mass of activity is concentrated within its narrow City boundaries. Thousands of business organisations, all more or less interdependent, swarm round its narrow streets and are ever adding to their numbers. The question arises, how is this growth to be met? Are we to add story upon story, or are we to spread out? Hitherto full advantage has been taken of the height allowed by authority, with the result that streets designed to take the traffic to three or four storied buildings are choked with hordes of workers pouring from those of six, seven, and eight crowded floors, to the hindrance of business, the growth of confusion, and the ruining of otherwise placid tempers. As the legal limits of high building are exhausted, there is a natural tendency to extend the business area within a wider radius, which must continue to eat its way out from the heart of the City. That this tendency to spread out is inevitable, and even now perceptible, is surely reason enough to view it with calm, rather than to clamour, panic-stricken, for the bonds of legal restriction to be cast off; for even if the law stands aside, the limits of human achievement must ultimately be reached and the problem raised afresh. Can we not rather encourage this natural tendency and check the mad disease of "sky-scraping?"

One would seriously suggest that owners of property in the heart of the City should be given, say, fifty years' notice, within which time to replace high buildings by others conforming to a 45 deg. line from the centre of their respective streets. At the completion of any such rebuilding the owner would be handsomely compensated out of public funds and his property re-rated. The surplus multitudes, dispossessed of the upper stories of the old buildings, would search for fresh fields to develop. Slums, residential districts, and estates of hitherto comparatively little value, would be cleared and laid out as off-shoots of the great City, increasing enormously in value in the process. The owners of property benefiting under these circumstances would have to submit to a heavy levy upon the increment, and this would provide funds from which the compensations mentioned above would be paid. Garden cities would multiply on the outskirts of the Metropolis and would be linked up by numerous new electrified lines which would discharge their multitudes daily at underground stations scattered over the greater city instead of as now concentrated within a tiny area. Such a drastic regulation would be enforced with discretion. A Ministry of Fine Arts, if it had arrived in time, would be given power to exempt certain buildings which through their fine architectural qualities justified their retention.

It might be urged that such an overgrown city would not lend itself to the speedy intercommunication so necessary in a business community. Yet commerce is rarely baulked by such trifling difficulties. Improved telephone service, networks of tubes and moving subway platforms can surely solve the difficulty, as the electric passenger lift has solved that of high buildings. Prosperity would follow the City as it grew, and at the same time London would sink once more to a sane human level, and her streets would give opportunity for the display of the highest architectural qualities.

Surely this is quite a reasonable proposition. It is made uninspired by any unhealthy appetite for debate for its own sake, and free from any cantankerous element delighting in conflicting with popular opinion. It is simply put forward as a sincere point of view that should point to finer architecture, healthier streets, more distributed prosperity, and a more equitable sharing out of the burden of rates, which can be effected without any commercial sacrifice. This ugly growth in our streets must be stopped and beauty be followed as the true guide to efficiency in all directions.

### The British Society of Master Glasspainters.

At Painters' Hall, last week, the Memorandum and Articles of Association of the British Society of Master Glasspainters were signed by members of the Provisional Council. Among the signatories were the Earl of Plymouth (President), Professor Selwyn Image (Vice-President), Mr. L. A. Marriott Powell, Captain Maurice Drake, Mr. W. Aikman, Mr. Percy Bacon, Mr. R. C. Bayne, Mr. R. Bell, Mr. F. C. Eden, Mr. H. Gryles, Mr. J. A. Knowles, and Mr. A. K. Nicholson.

# ARCHITECTURE IN AUSTRALIA.

The following is extracted from a letter received from a correspondent in Australia:—

"Architectural matters in Australia are at present in very peculiar circumstances, all the established firms working at top speed and all the younger generation just commencing on their own, struggling to exist. Numerous young fellows have opened on their own account, the reason mainly being their possession of an independent spirit and, perhaps, a slight tendency towards Socialism, in that, in the various offices, they are called upon to expend time and energy on works from any amount up to £150,000, their returns being in most cases a salary of £4 per week. Considering a carter is offered £5 2s. per week, a bricklayer £6 10s. per week, a carpenter £5 10s., and a wharf labourer working three days a week earns somewhere about £6 to £7, one can realise that £4 at the present cost of labour, food and wearing apparel, is scarcely remunerative enough after years of articleship and other experience on works.

"Registration of architects as well as estate agents has been promised by the present Labour Government, and this will do the profession as much good as anything ever put through, as all domestic work now is probably done by speculative builders . . . Another type doing well is the 'plans from 10s. 6d.' gent., who can supply a specification which forgets to mention the main timbers and construction of same, door or casement frames, and even 'plasterer' is omitted—a modern and up-to-date cottage requiring even no ceilings whatsoever. Just fancy how the proprietor would feel when he took over such a place, if carried out by a builder who believed in 'only as much as I can't get out of' business!

"An Architectural Association has been formed, Mr. Brownlie, A.R.I.B.A., being President, and its object is to create educational interest in architecture, as well as to help the assistant as much as possible. The Association is now recognised on an equal footing with the local Institute, and has its own representatives on various Council matters, Government, or other architectural questions. The formation of the Association was to secure justice for the assistant in the Registration Bill, which cut out any hope of an assistant, even though an A.R.I.B.A., commencing or securing recognition as an architect in the Bill. This has now been adjusted in the main. The whole idea is that only those passing the University degree will be eligible for practice, and in order to fill the gap between now and when the new Act can come into operation, a Council is to be formed to consider applications and set examinations for those considering registration.

"The Commonwealth Government is going ahead on top speed building war-service homes for returned men, under which scheme £800 is allowed for house and land. I am just completing five rooms, hall, bath and two verandahs — cost, without builder's profit, £780. Land in most localities averages from £4 to £10 per foot, even twenty miles out of Sydney. The War Service Homes has arranged to erect 3,000 homes in each State, each year. The returned-soldier architects have been formed into an Association to have a finger in the pie, and the names are being now submitted to the W.S.H. Commissioner for consideration for such work being let out to private offices, as well as being done by his own architects."

### Proposed Memorial in Perth.

It is proposed to raise a fund of £5,000 for the erection of a bronze statue to the late Lord Forrest in Perth, W.A., for which the services of Mr. Bertram Mackennal have been secured. It is also suggested that a memorial to Lord Forrest should be erected in the House of Lords.

# MANCHESTER SOCIETY OF ARCHITECTS.

## Presidential Address.

The following is an abstract of the address by the President, Mr. A. W. Hennings, F.R.I.B.A., delivered before the members of the Manchester Society of Architects on October 13 :—

Dealing with the recent past and endeavouring to point out the direction in which the architectural profession would be forced to travel, he said the vital change taking place was all to the good. Until 1914, the development of the practice of architecture was running in ordinary channels, and speaking broadly, any well-informed man could see pretty clearly where it was going. But after the war those peaceful meandering paths were torn up and distorted, and the aspect of things totally changed. That eruption had certainly speeded up the change in the methods of architectural education. The old system of pupilage was gradually developing into classes and schools, and in the course of years no doubt the old order would have changed into the new without trouble. It was only natural that they should regret the passing of this old system, but growing numbers alone made a change inevitable. Whether the change would result in better architects might be a matter of opinion—genius would out under most adverse conditions—but he thought the general level would be raised to an appreciable extent.

The present was a glorious opportunity for architectural schools, and it was the duty of architects to help in every way—not to stand aside because they regretted past ways, but frankly to recognise the change that had and was taking place and to see to it that they did all in their power to vitalise it. Vitalising was really the kernel of the whole matter, and if the matter were left to the university professors entirely he feared they would get a monotonous result, and he sincerely hoped the various schools would avail themselves of the help and counsel of the various architectural societies. Architectural design was a very personal matter, and the danger of academic training was to turn out students of one pattern.

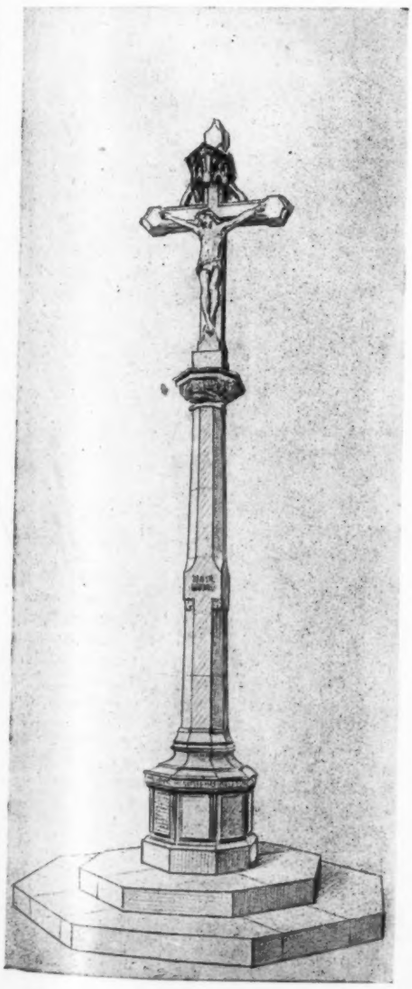
Referring to post-war difficulties, he said they expected changes and troubles, but they never expected the wholesale batch that was upon them. Combinations of manufacturers on one side and labour on the other had brought about a state of matters without precedence, and on all sides there was doubt and anxiety as to what might be the outcome of it all. These troubles had resulted in a terrible shortage of material, and when they got what was wanted it is so costly that they hardly dared state to their clients what would be the probable cost of erection. Beyond all that labour not only demanded much higher wages and shorter hours but all their experience showed that per head much less work was turned out. That unfortunate combination of circumstances must, if not checked, result in general stagnation, and although for a year or so there might be an appearance of prosperity in certain trades owing to the great profits the shortage gave rise to, the outlook for all was not good.

An instance of the great difficulty experienced was the national housing schemes. All seemed to promise well, but circumstances had checked and hindered the schemes to a remarkable degree, and now after about eighteen months of work very few houses had been erected. Carefully thought-out plans had been scrapped, and in desperation, patent, untried methods had had to be adopted, with accommodation cut down to the minimum, all artistic bits abandoned and, above all, the prospect of rents raised to a height undreamt of, and that for property that might possibly be loathed and avoided in a few years by the very people for whom it was to be built or being built.

In other directions than housing, particularly in industrial work, which, after all was the real foundation of the prosperity of the Manchester district, the war necessities had taught them a lot and they had learned how to meet difficulties in many new and striking ways, some of which would remain and modify both planning and design to a very appreciable extent. On the other hand, new methods of producing goods would be much more usual in the future, and that again would cause changes on the architectural side of the work, so that they must look forward to many changes in their practice—the man who would not get out of old grooves would be left behind in the race.

Besides the combinations that had and were hindering them, there was another combination that would help them very greatly, and just at present promised to materialise. At present the profession was split up and consequently weakened, and the ordinary man looked upon an architect as a man following a profession that anybody could do; and, indeed, anybody did do it without being trained and fitted for the purpose. That was bad—bad for architecture as a profession and bad for the public who suffered from ignorant practitioners. General opinion seemed to have crystallised upon registration as the best way to put the profession upon such a basis that the public would not be allowed to employ any man not registered, and that would be a good jumping-off spot for the next forward move, namely, that the public would not be allowed to build without employing the services of properly-qualified men.

The Unification Committee of the Royal Institute of British Architects hoped to find a way by which they might approach Parliament as a united body and so get the registration wanted. Hitherto it had been impossible owing to divisions, and it could not be expected that recognition would be given to one society only.

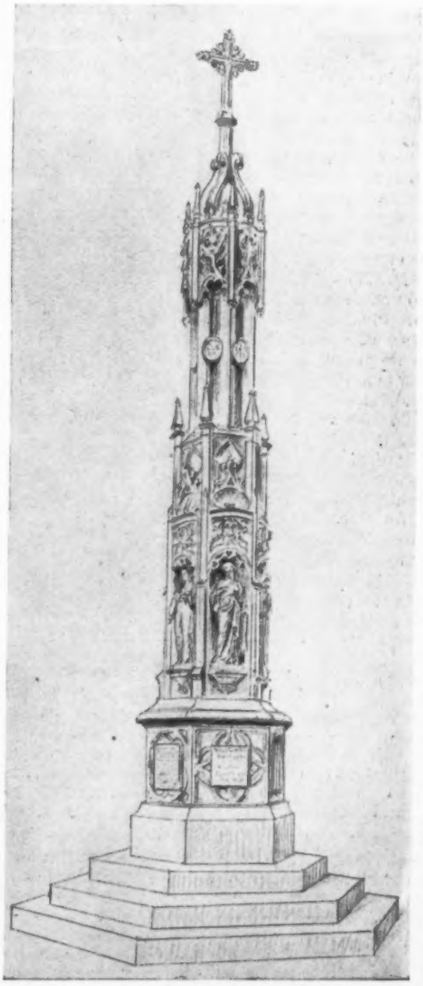


**War Memorial Cross, St. Michael's, Camden Town.**
Mr. Clement W. Jewitt, Sculptor.

# EXHIBITION OF CIVIC SURVEY DIAGRAMS.

At the Galleries of the Royal Institute of British Architects, on November 2, there will be opened an Exhibition of Civic Survey Diagrams. The scheme for this work originated in the early part of the war in order to find employment for many architects whose work had entirely ceased in consequence of the stoppage of building on the outbreak of hostilities. The Exhibition should be of interest to all who are interested in improving the amenities of our towns and cities, as it is the first occasion in this country on which such a scheme has been attempted. Broadly, the idea behind the undertaking is to give, in diagrammatic form, the basis or groundwork for development in town planning. Data covering the whole ground of a city's activities are recorded—the methods of governance, the manufacture and residential conditions, the places for work and recreation, the incidence of health and disease, the birth and death rates, traffic facilities, the climatic conditions, &c. A good deal of the information conveyed by the diagrams is the result of independent investigation by the Civic Survey. The areas dealt with comprise Greater London and districts in South Lancashire and Leeds. The London Society's "Development Plan of Greater London of the Future" will also be included in the exhibits.

Special conferences will be held during the Exhibition upon such matters as London traffic, London housing, public health (preventive and curative), business aspects of the civic survey, civic survey from the woman's point of view, geology and the civic survey, the history and archæology of London, &c.



**War Memorial, Howden.**
Mr. Clement W. Jewitt, Sculptor.

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## ILLUSTRATIONS.

### Buildings for the Port of London Authority.

We give several illustrations this week of buildings recently designed for the Port of London Authority by Mr. Edwin Cooper, F.R.I.B.A., who is the architect for their head building in Trinity-square, now nearing completion.

The scheme for police and firemen's houses at Tilbury is marked by a direct and simple treatment. Its outline is well composed, the materials are well chosen and carefully disposed, and the result is complete and convincing. The builders are Messrs. J. Mowlem & Co., Ltd.

The Main Central Stores, West India Dock, is purely a utilitarian building for the storage of engineers' materials; it has been treated with precision and architectural character while maintaining its purpose unmistakably.

The Warehousekeeper's Offices at the Royal Albert Dock were designed to accommodate the officials and staff of the Warehousekeeper's department and kindred officers, in addition to certain offices for the use of the Customs. The builders are Messrs. J. Mowlem & Co., Ltd.

For the present it is proposed to erect a portion only of the Tobacco Warehouse, Victoria Dock. It is designed for the use of various departmental controllers of dock business and their staff. Mr. Cooper has contrived that the first portion built shall be an entity, while avoiding the disadvantages resulting from a partial provision for administration. The future occupants of this building are now scattered about promiscuously in small offices, and the Authority has decided to gather them under one roof. The builders are Messrs. Walter Lawrence & Sons, Ltd.

With regard to all these schemes it is satisfactory to note that, in an environment such as that of the London Docks, buildings may, if properly handled, satisfy æsthetic demands without infringing upon the urgent needs of business and industry.

The quantity surveyor for all the above work is Mr. Geo. A. Webster; and the clerk of works Mr. J. Fraser.

### Ballymena Town Hall.

The design for a new town hall for Ballymena, by Messrs. Alfred E. Jones and Stephen S. Kelly, architects, of 17, South Frederick-street, Dublin, was placed first in the recent competition. In their report the architects state that the main entrance has been placed in Mill-street, and the secondary entrance is from Bridge-street. The Council Chamber is in a quiet position away from the noise of the main thoroughfare, and very convenient to the Town Clerk's office. The minor public hall and Council Chamber have been planned *en suite* in order that these two rooms can be used together when required. All the offices have been planned together on the main corridor, with lighting from Bridge-street. In the event of the Council Chamber and minor public hall or theatre being used for such purposes that entrance to the offices from Mill-street would not be desirable during the time these halls were in use, the entrance at the lower end of Bridge-street could be used for the purpose. The dressing-rooms are planned on the ground floor convenient to the stage, and could be used as offices when not required in connection with the theatre.

Two emergency exists have been provided, one to be used as an entrance to the dressing-rooms and stage and the other a secondary entrance to offices and to the caretaker's apartments. The existing ancient lights have been retained to light the heating-chamber, emergency exit and dressing-rooms. The principal entrance to the theatre is from Mill-street and is approached from the main staircase. The seating accommodation on the theatre floor would be 898, and in the gallery 270, making a total of 1,168. The seats are spaced 2 ft. 4 in. centre to centre, and 1 ft. 7 in. wide. The hoist, which consists of a jib acting over the area, is planned convenient to the stage so that there would be no difficulty in getting scenery, &c., in or out. The caretaker's apartments are placed in the attic over the stage, and are approached from the Bridge-street staircase; consequently the caretaker would have access to all parts of the building at any time.

The walls to Bridge-street and Mill-street could be built of the existing black basalt stone on the site, with dressings of limestone or granite. The existing brick on the site could be used in building the rear portion. Floors would be of reinforced concrete. The roof would be constructed of steel trusses and timber, except the portion over the operating box, which could be constructed of fireproof material. The shape of the roof is suited to a fireproof construction throughout.

The cost is worked out as follows:—Offices: 27 ft. by 84 ft. by 20 ft., equals 45,360 cub. ft., deduct tower, 13 ft. by 13 ft. by 20 ft., equals 3,380 cub. ft., leaving a total of 41,980 cub. ft., which at 2s. per cub. foot equals £4,198; Council Chamber and minor hall: 40 ft. by 82 ft. by 20 ft., equals 65,600 cub. ft., which at 1s. 9d. per cub. foot equals £5,615; Theatre: 82 ft. by 67 ft. by 35 ft., equals 192,290 cub. ft., deduct tower, 13 ft. by 13 ft. by 35 ft., equals 5,815 cub. ft., leaving a total of 186,475 cub. ft., which at 1s. 6d. per cub ft. equals £13,985; Caretaker's apartments, stage and lavatories, dressing-rooms, heating, &c., make a total of 71,905 cub. ft., which at 1s. 8d. per cub. ft. equals £5,992. The total cost of the building, therefore, would be £29,190.

In the course of their report, the assessors, Messrs. Kaye Parry & Ross, of Dublin, state that this design is illustrated by a very perfect set of drawings, and is of conspicuous merit. The municipal offices are well arranged. The minor hall and Council Chamber are adequately lighted. The main entrance to the halls is rather cramped, but having regard to the conditions laid down it is perhaps as large as could be provided. The floor areas of the various rooms correspond closely with those mentioned in the conditions. The large hall claims to have seating capacity for 1,168. It is probable, however, that when the seats are arranged it may not be possible to provide quite so large a number, but it will certainly seat more than 1,000 persons comfortably. Two good emergency exit staircases are shown, and a useful cinema room is also indicated which is large enough to act as a "winding" room. The stage is rather shallow back to front, and would not give room for a spectacular performance. There is no space over the stage to accommodate scenery, but possibly the small travelling theatrical companies would not require this accommodation. The caretaker's apartments are well arranged on an attic floor. The artistes' dressing-rooms are suitable and accessible. The engine and dynamo rooms are well situated and lighted. The ladies' and gentlemen's cloak-rooms afford as convenient accommodation as the exigencies of the site will permit. The elevation to Mill-street and Bridge-street are dignified and artistic, and the fenestration is cleverly designed both as regards illumination and proportion. The hoist is very well placed to serve the stage.

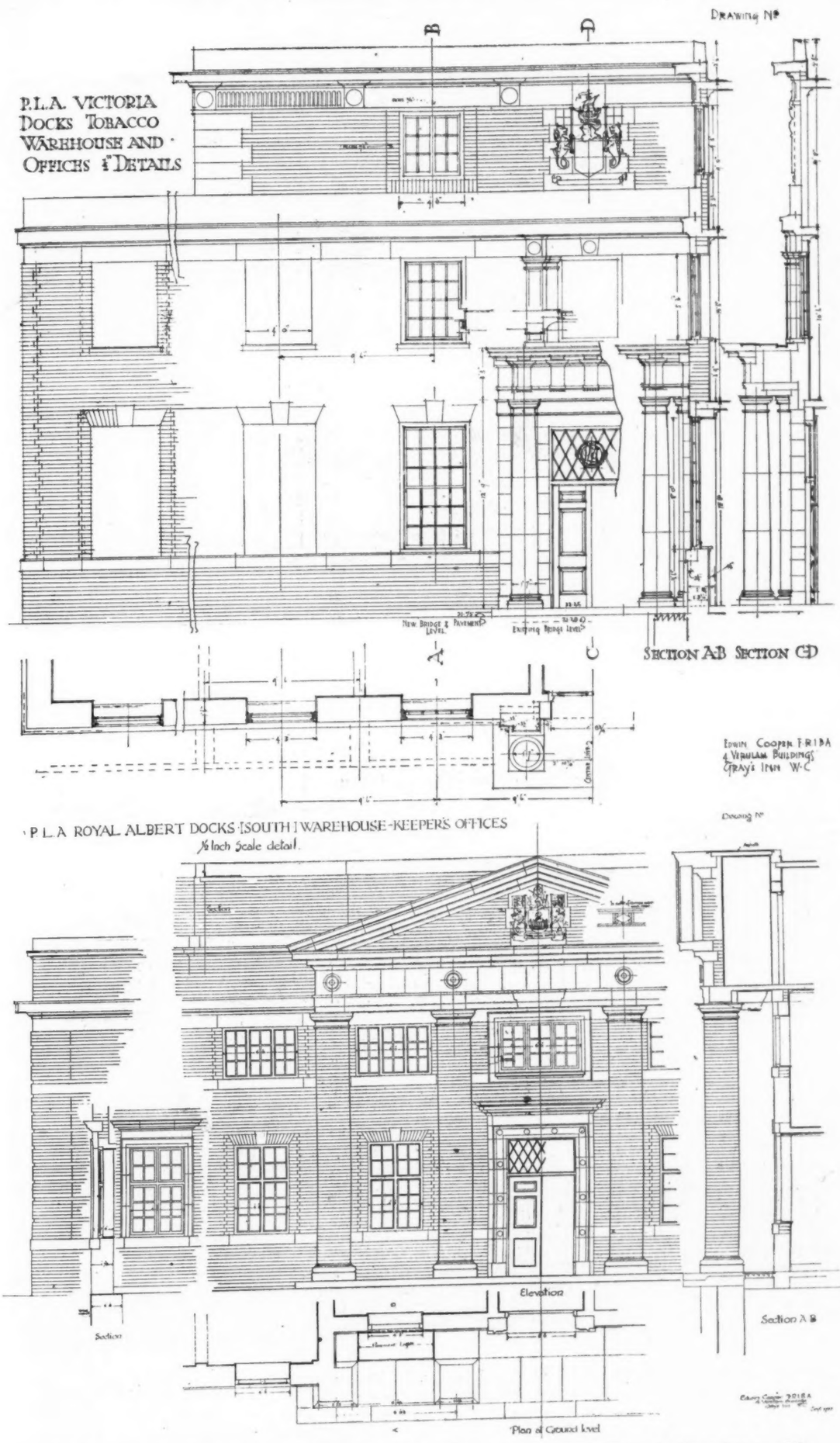
## EXHIBITION NOTES.

### DESIGN AND INDUSTRIES ASSOCIATION.

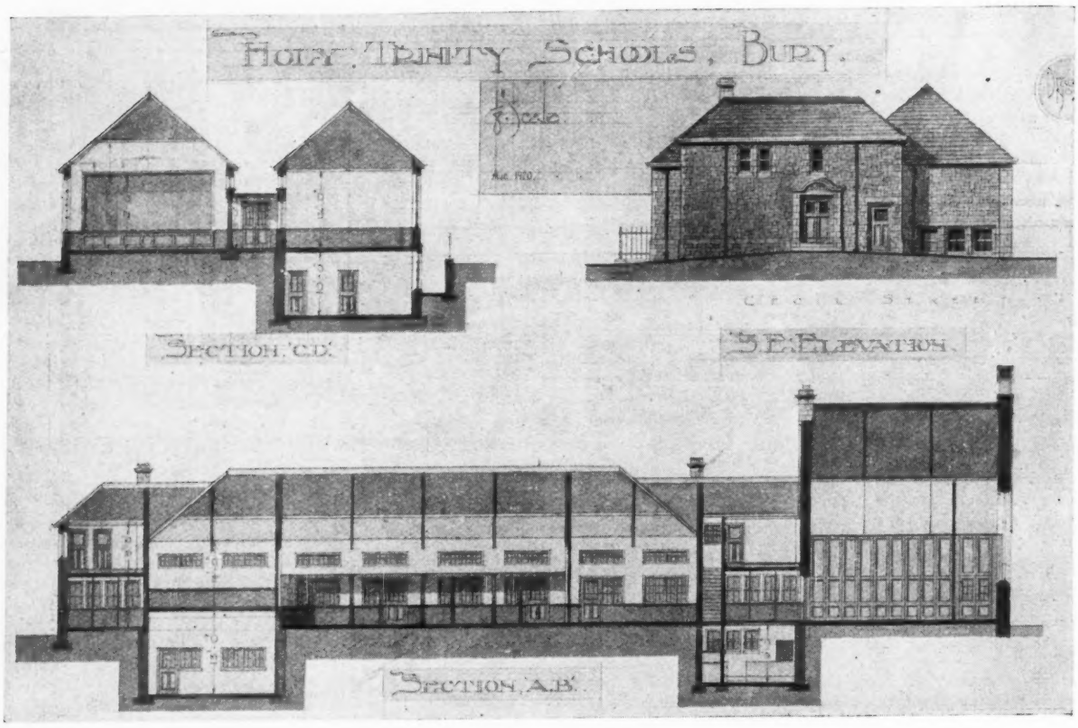
The influence which reaches us on entering the Whitechapel Art Gallery is one of encouragement. The wall paintings by Miss Elsie McNaught which adorn the entrance hall, neither learned nor very skilled, are yet so human, observant and characteristic of the subject matter that they give us just the right sort of pleasure. In greatly daring to do things badly, she outstrips much that has been painted well in recent years, demonstrating to us that where the desire of expression is vigorous and true enough, it always finds the means of communicating itself to others. The exhibition of the Design and Industries Association exemplifies in its own way something of the same point of view. It does some things rather badly at present, but because they are simple and unpretentious they become very important. The Association is so modest in its claims for the exhibition that it is extraordinarily interesting. It comes as a surprise to us that it should have dropped so many of the prerogatives of reforming movements as to meet us on equal terms, and it is this foundation of good sense which promises so much for its work. The exhibition should be visited by all those who are concerned with the improvement of the surroundings of our daily life, and in the light of the many housing schemes now in progress and of the important developments in the way of building guilds should greatly improve them. The object of the Association, as stated in the catalogue, is to offer facilities to people for obtaining suitable, tasteful and useful domestic articles of good design and workmanship. The machine-made article is not rejected because it is recognised that it has got to be accepted, though its methods can be improved, and they hope to reach a general co-operation between the designer, manufacturer, distributor, educationalist and the general public. It is very rightly pointed out that the same fitness and suitability to be seen in the plough and the aeroplane is also the first requirement for economy, beauty and use in household things; and there is very little said about art and no sentimental talk about ideals, both of which need a long rest at the present time.

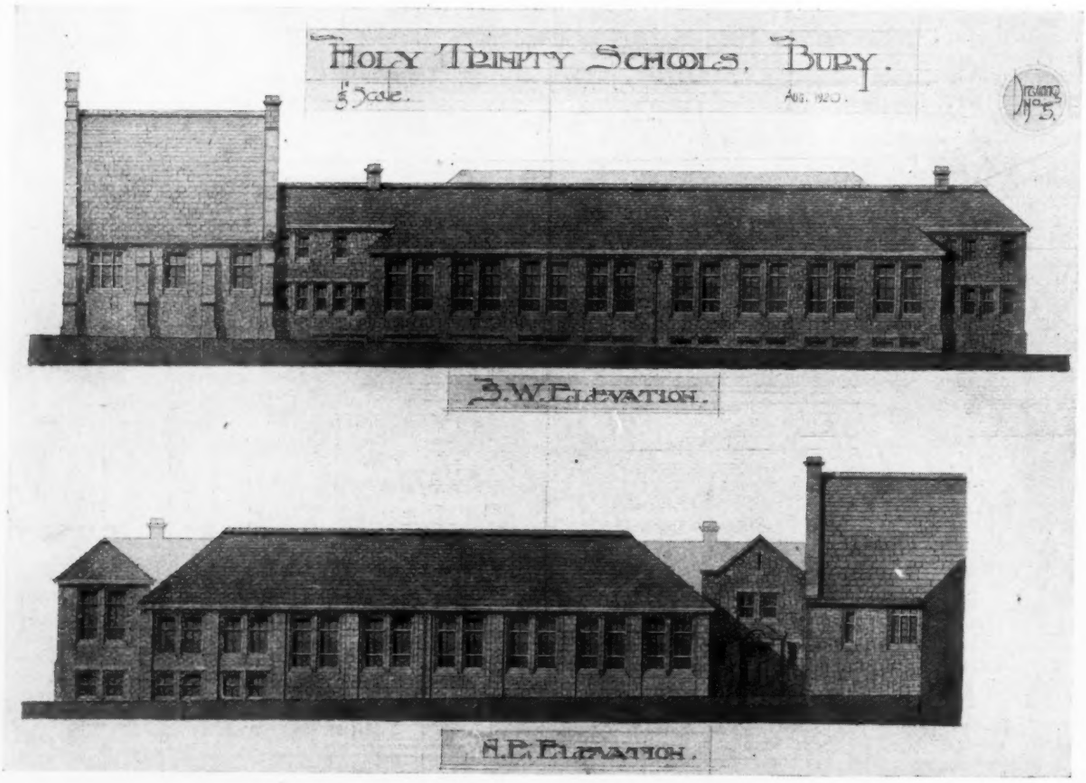
The pottery shown is in most cases of a serviceable and well-designed character, of good colour and free from fancy ornament. The charm of the exhibits consists in the fitness for service of the articles shown, which is the fundamental requirement. Ornament with this anterior necessity only exaggerates defects, and does not hide them. A series of very simply furnished and decorated small bedrooms, of which numbers 7 and 8 are specially attractive, are full of interest, and show a very definite improvement on what is probably to be found in most small suburban houses at the present time. These little rooms convey quite their own pleasant atmosphere of cheerfulness and innocence, as though the fairies might begin to visit the children again in them—and what have most bedrooms had to do with fairies in recent years? We peep through our curtain of respectable dullness into another world, and just because the contents of the rooms are not borrowed out of the antique furniture dealer's shop, we find again in them something of the old-world charm. If this new spirit can be made to enter into the new homes that are being built for the people it will not only greatly improve their surroundings, but their thoughts as well. What a contrast is offered in some of these little rooms (Nos. 7 and 8 for instance) to the meretricious opulence of the suburban bedroom furnishings, with its horticultural affinity, the "Dorothy Perkins" rose, adorning the front garden?

We do not suggest that the exhibition answers to every need, but it has a value for the well-being of life far exceeding the exhibitions of great masters' works such as we remember years ago in the same gallery, at which the people stared, but in which the pictures were too far removed from the conditions and surroundings of their daily life to touch them very nearly even if they meant anything to them at all.

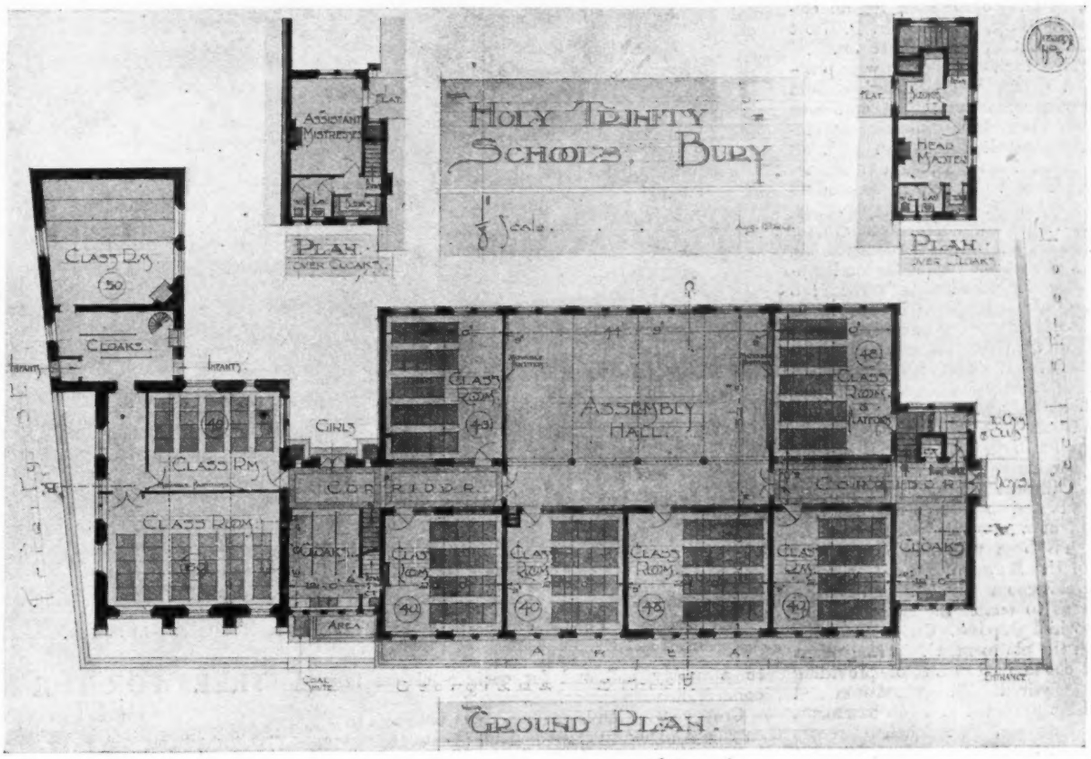


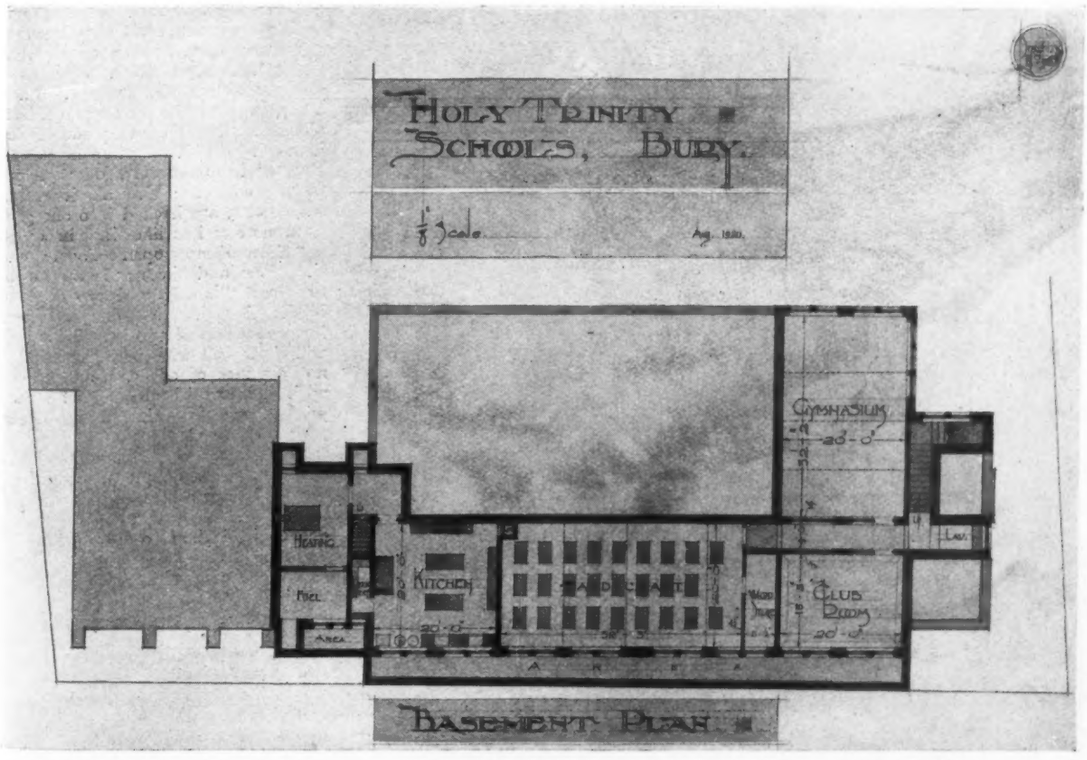

**New Buildings for the Port of London Authority.** Mr. Edwin Cooper, F.R.I.B.A., Architect (see p. 486).




**Bury School Competition.** First Premiated Design, by MESSRS. BIRAM & FLETCHER (see p. 490).




**Bury School Competition.** First Premiated Design, by MESSRS. BIRAM & FLETCHER (see p. 490).

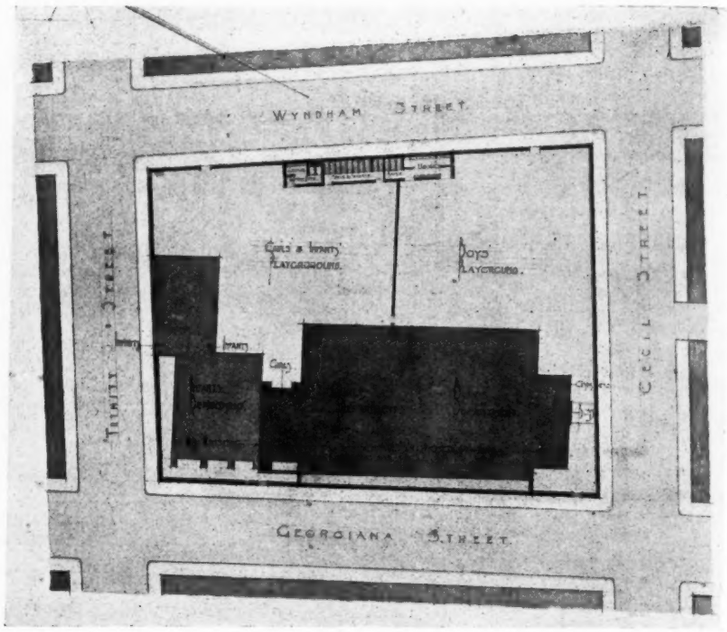
## BURY SCHOOL COMPETITION.

We illustrate this week the first premiated designs, by Messrs. Biram & Fletcher, architects, of St. Helens, in the competition for an elementary school at Bury, Lancs. Mr. P. Scott Worthington, F.R.I.B.A., was the assessor.

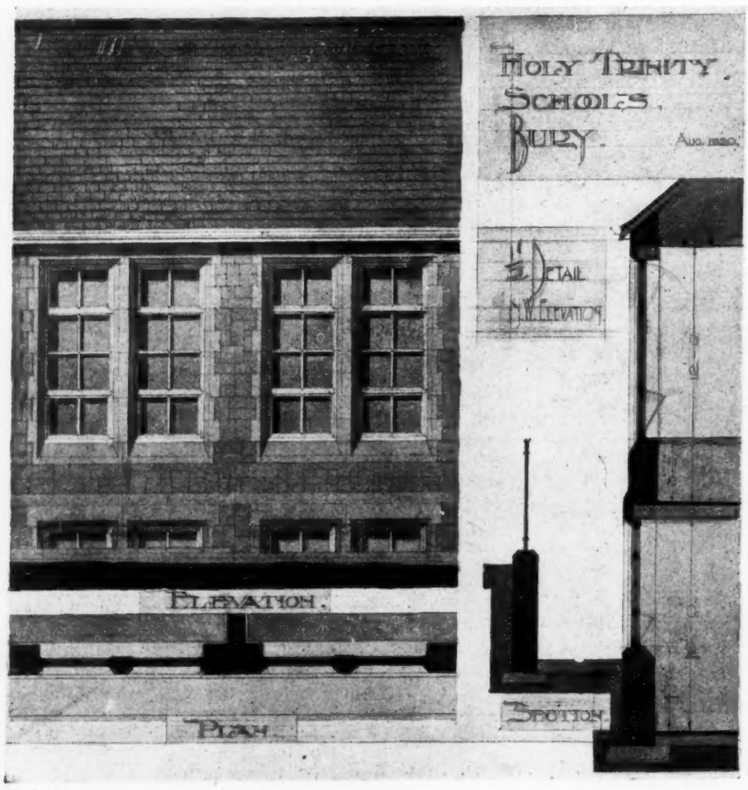
The present mixed school buildings were practically destroyed by fire, the infants' schoolroom and classroom only remaining. The conditions required the provision of the following accommodation:—A central hall provided with an ample platform; six classrooms, three to accommodate forty-eight and three to accommodate forty scholars (one of the classrooms could be provided for on the platform of the central hall, if that would lessen the cost); a room for the Headmaster; a storeroom for books and stationery, adjoining the Headmaster's room; a room for the assistant mistresses (these rooms to contain separate lavatory accommodation); a kitchen and storeroom for crockery (equipped with range, hot and cold water, sink, &c.), which could be used for cookery lessons as well as for parochial parties; a handicraft room; a gymnasium and lads' clubroom; separate entrances and cloakrooms for boys and girls; a heating chamber and storehouse for fuel.

In the design illustrated, the larger infants' room is to be adapted to modern requirements by the erection of a movable partition. The assembly hall has been planned to meet the requirements of the Board of Education, with two additional classrooms divided from it with folding partitions to enable its size to be increased for parochial purposes. One of the classrooms will form the platform, this arrangement being the most economical means of providing the large hall required. The gymnasium and lads' clubroom are provided in a sub-basement, with separate entrance. The teachers' rooms are placed over the cloakrooms, which are kept at a lower height than the remainder of the rooms. The handicraft room is in the sub-basement, and can be entered either direct from the school or by a separate entrance for outside classes. The kitchen is in the sub-basement; it is fitted up for parochial purposes with lift to assembly hall and for cookery classes in connection with the school.

Cross ventilation is provided over flat roofs to corridors to every classroom and the assembly hall. The heating is on the low-pressure hot-water system, and the illumination by electric lighting. The front and ends of the building are to be faced with random stone blocks, to be salved from walls to be taken down; the playground elevation is to be in concrete blocks made from aggregate from pulling down.




**Bury School Competition.**
First Premiated Design, by MESSRS. BIRAM & FLETCHER.




**Bury School Competition.**
First Premiated Design, by MESSRS. BIRAM & FLETCHER.

## TREES FOR THE NEW STREETS.

MR. JOHN BOND, of Bedford Park, writes:—

"A street planted only with laburnum trees, all in bloom at the same time, an avenue of shimmering gold! It is doubtful if you could find such a thing in England. Yet how charming it would be, and how easy of achievement. The laburnum grows quickly, its foliage is light and graceful, its shape most diverse—an admirable tree for some of the new streets which we are to have some day, especially the narrower ones.

"Every consideration ought to be given to the enhancement of the appearance of these new streets by suitable trees. The chestnut is a superb tree in its proper place, but that is not alongside the kerb. Very soon it forms a large hemispherical head, impenetrable by light. Darkened rooms result, followed by complaints to local councils; then all the trees, no matter the species, are hacked into one grotesque pattern, more or less like those in toy Noah's arks.

"Trees of more open foliage, such as the ash, the plane and the maple are to be preferred for street planting, and, of course, the ethereal birch. But there is room for experiment with less conventional species. Lilacs, for instance, will grow well with a single trunk. And why not avenues of apple, pear and cherry trees, with their exquisite blossoms? The youngsters would appropriate the fruit, no doubt, but good luck to them!

"When a new estate is first laid out, many fine trees are usually laid low. I would rather see the houses and roads adapted so that some of the best trees may be spared.* No house ever built is half so beautiful as a fine elm! Are the architects jealous? Some, I know, cannot bear to see creepers covering little bits of mouldings they have designed. The house which stands alone on land bare of trees makes a very poor showing in comparison with a similar house backed by tall oaks, walnuts or elms. In grace, variety, character, majesty and beauty, the English elm is supreme.

"Newly-planted trees which are intended to grow large should be placed where they will not rob the house or the flower garden of too much sunshine when they mature. They can then develop naturally, as all trees should, instead of having to be pruned until disfigured for life."

[*Few competent architects neglect to spare fine trees in considering the lay-out of housing estates.—ED.]

# SOME ECONOMIES IN SCHOOL CONSTRUCTION.—II.

THE following is the concluding article on school construction, by Messrs. Percy E. Nobbs, M.A., F.R.I.B.A., A.R.C.A. (Professor of Architecture, McGill University), and George E. Hyde, B.Sc., of Montreal. These articles, the first of which was given in our last issue, have appeared in the *Architectural Forum* :—

The successful planning and construction of any kind of a building involves many close economies and a very careful use of space, which are the result of present costs and conditions. The building of schools means the use of public funds and this makes it more than ever necessary to secure the maximum of results at the minimum of cost. The means by which several practical school buildings have been worked out and their cost kept within the necessary limits involves several very interesting features.

### Corridor Finish.

Throughout the series of schools under review the following corridor finish has been used. There is a cement dado to a height of 6 ft., with a base in red tile. The floors have 3-ft. borders of terrazzo, the central area, 6 ft. in width, being depressed ¼ in. and finished in cement over which is laid battleship linoleum. A galvanized-iron fillet, set on edge at the inside of the border, protects the arris of the terrazzo from damage.

### Class-room Trim.

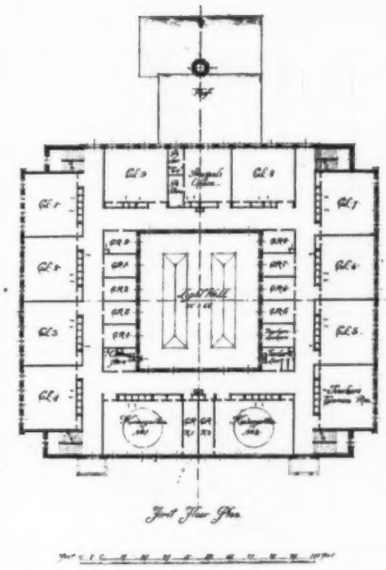
There is a minimum of trim in the class-rooms. At the window jambs the plaster is taken right in to the frames and the joint between is covered with a small cavetto. The sill aprons are continued by way of a chair rail. Below this there is a cement dado. A quarter-round convex base takes the place of a skirting. The chalk rail to the blackboards is in wood, but the frame is formed of ¼ by 3-in. steel. The doors are of "slab" type, set in steel frames flush with the plaster and consequently there is no wood trim. In a number of schools a standard rolled steel door frame was employed and this suited admirably, but in 1914, when the war made the utmost economy essential and the practise of the principle of "made in Canada" a duty, a door frame was made up by using 6-in. rolled steel channels with a stop bead of wood. This special frame was made at about half the cost of the imported article. For the internal wood finish, red oak is used throughout.

### Lavatory Stalls.

In these schools the evolution of the lavatory stalls has been interesting. The stalls in the boys' lavatories called for most thought, as the school authorities insisted upon a construction such that the only possible means of access should be through the door. This requirement arose through a tendency among certain small individuals to bolt the doors in each of a row of stalls from the inside, a feat made possible by travelling along the tops of the partitions. The ordinary public lavatory stall with 6-ft. 6-in. partitions and 12-in. floor openings and slatted doors would not do. After a number of experiments, which met with varied success, the following installation was devised and seems boy-proof. The main frame is of 2-in. iron pipe. Stall divisions are ⅞-in. white marble to within 6 ins. of the floor and 6 ft. high. The marble is carried in channel irons riveted to the pipe frame and bolted to the wall. The doors are hung in oak stops bolted to the pipe uprights. These stops are convenient for fixing the hardware, a very desirable feature. The doors are flush on both sides and only 1¼ ins. thick. They are made with a core, which might be termed "skeleton," as it consists only of stiles, rails and cross braces. Above the doors and above the marble at the ends of ranges of stalls white enamelled cast-iron grilles extend to a height of 10 ft. above the floor. Besides proving an efficient barrier this arrangement looks well and wears well.

### External Treatment.

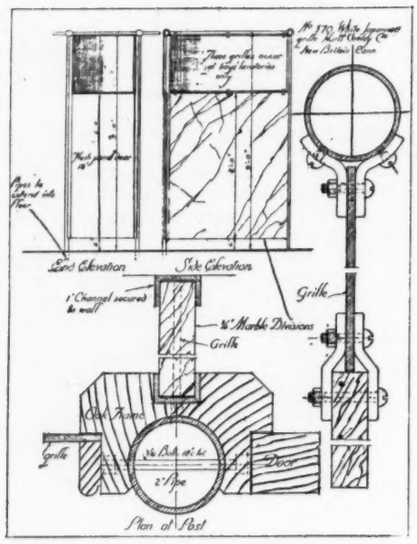
The exteriors of these schools are, of necessity, treated in the simplest possible way. Care is taken to maintain the proportions of the prevailing types of windows as far as possible and to group the windows systematically, so that if a certain dulness is inevitable, at least it may not be a disagreeable or unintelligible dulness. The brickwork, whether plain or devised to take advantage of the contrasts of textured surfaces with bright pressed margins, is carefully laid and most carefully pointed with a flat keyed joint ¼ in. deep. The result aimed at is building without architecture, in the sense that conventional forms and arbitrary composition are entirely lacking. What symmetry and regularity is attained is merely the automatic expression of an orderly and economic plan, and a highly organic structural method. Ornament and decoration are not entirely dispensed



**Peace Centenary School : First Floor Plan.**

**Peace Centenary School, Protestant Board of School Commissioners, Montreal.**

MESSRS. NOBBS & HYDE, Architects.




**Details of School Lavatory Stall Divisions.**

with, however. Occasional and sparing use has been made of terra-cotta mosaic panels and of cement productions of such things as Della Robbia's "Singing Choirs," Verocchio's "Boy with the Dolphin," &c., and occasional dedication panels in stone, and finials on the skyline.

### Costs.

The efforts of the architects have been directed to the discovery of economic materials and methods of construction, the use of which would neutralise the steady increase in building costs and maintenance charges. The fruits of their efforts are set forth in the table below giving detailed costs on four schools, three of which are very similar in type. In these compilations the height of the buildings have in all cases been taken at 64 ft.—the dimension from a level two feet below the ground floor to the top of the roof coping. It will be noticed that the Strathearn school cubic foot cost is above the average, but the cost per pupil is regular. This is evidence of the close-packed character of the plan. The Edward VII school was a two-story building. These low cubic foot costs, which resemble values in factory or loft building construction, have not been obtained by the sacrifice of sound workmanship or good materials. The structures are as substantial and lasting as it is possible to make them, and the engineering specifications provide for an equipment compatible only with highest standards of requirements and the most efficient results.

COMPARATIVE TABLE OF COSTS.

| | School. | | | |
|---|---|---|---|---|
| | Edward VII. | Strathearn. | Peace Centenary. | Bancroft. |
| Common classes | 22 | 26 | 31 | 29 |
| Kindergarten | 2 | 2 | 2 | 2 |
| Sloyd | 0 | 0 | 1 | 1 |
| Cookery | 0 | 0 | 1 | 1 |
| Total class rooms | 24 | 28 | 35 | 33 |
| Boys' play room area, ft. | 3,300 | 2,700 | 6,500 | 5,000 |
| Girls' play room area, ft. | 1,900 | 2,400 | 4,000 | 5,000 |
| Gymnasium area, ft. | 2,000 | 2,100 | 3,600 | 2,200 |
| Boys' urinals | 18 | 41 | 58 | 34 |
| Boys' w.c. | 16 | 17 | 36 | 26 |
| Girls' w.c. | 16 | 31 | 58 | 35 |
| Cubic contents, ft. | 931,000 | 873,000 | 1,434,000 | 1,250,000 |
| Cost, general contract | $143,775 | $168,000 | $205,000 | $181,000 |
| Cost, engineering | $30,550 | $33,500 | $45,000 | $41,000 |
| Total cost | $174,325 | $201,500 | $250,000 | $222,000 |
| Cost per cub. ft. | 19c. | 23c. | 17.5c. | 17.8c. |
| Cost per class room | $7,280 | $7,150 | $7,143 | $6,700 |
| Number of children | 1,000 | 1,200 | 1,500 | 1,400 |
| Cost per child | $174 | $167 | $167 | $157 |
| Date of completion | Sept., '12 | Sept., '13 | Sept., '14 | Sept., '15 |

## OBITUARY.

### Mr. H. W. Pratt.

The death took place on October 21 of Mr. Hampden William Pratt, F.R.I.B.A., a former Member of Council of the R.I.B.A. and President of the Architectural Association for the year 1897–1898.

### Mr. J. B. Mitchell-Withers.

The death occurred at Sheffield, on Saturday last week, of Mr. John Brightmore Mitchell-Withers, F.R.I.B.A., at the age of 55 years. Among the many architectural works with which Mr. Mitchell-Withers was connected were the Firshill School, extensions to the Sheffield Central Schools, and the premises of Messrs. John Walsh, in High-street. He was a member of the Sheffield Society of Artists, the Hunter Archæological Society, and the Sheffield Society of Architects, of which he was a Past President. He also represented the Sheffield Society of Architects on the Council of the R.I.B.A. for a time. In the founding of the Department of Architecture at Sheffield University, Mr. Mitchell-Withers took a keen interest, and for some years he was one of the honorary lecturers on English Gothic architecture. He was also a member of the Council of the Sheffield Literary and Philosophical Society.

### The Late T. L. Watson.

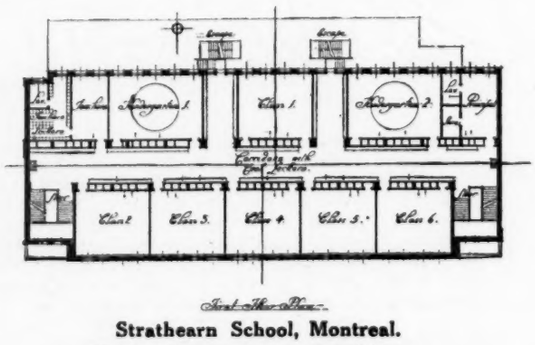
We have received the following appreciation of the late T. L. Watson from Mr. Malcolm Stark :—

"A master-mind has passed from our midst. The name—Thomas Lennox Watson—recalls the days of the "old brigade," which included such illustrious names as Waterhouse, Street, Pearson and Norman Shaw, whose work in the seventies and the eighties was so provocative of enthusiasm. 'J. L.,' as we called him, in common with many of us caught the spirit inherent in their splendid achievements, and it was a matter of acknowledgment among his contemporaries that as a resultant effect he quickly found himself in the front rank of the profession.

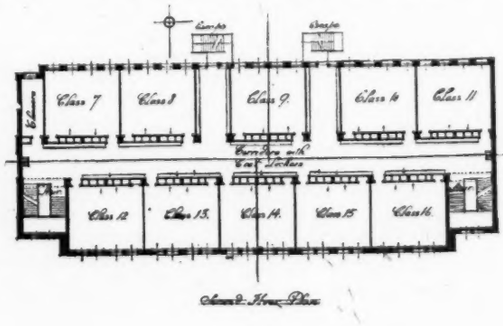
"Mr. Watson, I need hardly say, was most appreciative of a high order of architectural expression in the direction of fine art, and was not stinting in his meed of praise in regard to the promising and meritorious efforts of others. Personally, he was resourceful, precise and businesslike, and these qualities found expression in all he did. Drawings sent forth to contractors never had the appearance of being 'rushed.' In his executed work one might be disposed to say that some of it lacked the element of spontaneity. His earlier work certainly is more inspired than his later, and consequently more inspiring. The Victoria Baths, Glasgow, is a good example of it. The building is designed in a free treatment of Arabesque and is stamped with the influence of the work of Waterhouse, and none the worse for it.

"Mr. Watson also erected two large office blocks for the *Glasgow Citizen* in different thoroughfares of the city. The earlier one erected is the better of the two, it is more effortless and has a quiet, businesslike air about it that compels attention. He also erected about half-a-dozen ecclesiastical buildings, and while Wellington Church, perched on a hill in a fashionable Glasgow suburb, is his one outstanding monumental edifice, he has given to Bristol an architectural gem. The Baptist church in Stapleton-road is a stone-built place of worship planted in a strange environment and speaks out with a strong Glasgow accent, reminiscent of the language of Greek Thomson happily blended with a flavour of the refinement of Cockerell for the Southerner, accustomed as he is to greater freedom in the treatment of classic. Thomson's version may be said to be too severe and abstract and apt to leave him cold and untouched. This church is a small building, and has not been a subject of illustration. Its scale, its ensemble of features, and refinement of detail leave nothing to be desired.

Mr. Watson was ever ready with his pen as well as with his pencil, and frequently wrote very encouraging letters to students who sought his valuable advice. Indeed, anyone whose interest in architecture was obviously sincere and who claimed his services was not disappointed. The writer's mind is fragrant with the memory of many pleasant hours spent in the company of this lover of students.




**Strathearn School, Montreal.**
MESSRS. NOBBS & HYDE, Architects.
FIRST FLOOR PLAN.




SECOND FLOOR PLAN.

# LEGAL SECTION.

## NOTES ON CURRENT CASES.

### Increase of Rent and Double Rent.

The decision of the Court of Appeal in the case Flannagan *v.* Shaw (1920, 3 K.B. 96), although the decision was given before the Increase of Rent Act, 1920, has an important bearing on that Act. In this case one Davies had let to the defendant a house on a quarterly tenancy at a rent of £20 a year. In December, 1917, the defendant, having bought another house, gave notice to the landlord (Davies) that he would determine the tenancy of his house on the following Lady Day, and in February Davies had sold the house to the plaintiff in this action. On Lady Day, the defendant, being unable to obtain possession of the house he had bought, refused to quit the house he had leased from Davies. The plaintiff required the house for her own occupation, but was unable to obtain possession on this ground, because at that time the Increase of Rent (Amendment) Act, 1918, was in force, which provided that a person who had purchased a house since September, 1917, was not to be deemed a "landlord" in section 1, subs. (3) of the Act of 1915. This precluded her from claiming possession, as under that subsection it had to be shown that "the premises are reasonably required by the 'landlord' for the occupation of himself. . . ."

In these circumstances the plantiff brought this action under section 12 of the Distress for Rent Act, 1737, claiming double rent. The County Court Judge had given judgment for the plaintiff, but the Divisional Court had held that this was an increase of rent under the Increase of Rent Act, 1915, and entered judgment for the defendant. One of the two judges had, however, expressed some doubt.

Section 13 of the Distress for Rent Act, 1737, provides: "Whereas great inconveniences have happened and may happen to landlords whose tenants have power to determine their leases by giving notice to quit the premises and yet refusing to deliver up the possession when the landlord hath agreed with another tenant for the same," and then enacts that the tenant so doing shall pay double the rent or sum payable at the same times and in the same manner as the single rent during all the time the tenant shall remain in possession. On the appeal the point was raised that the earlier statute had been repealed or suspended by the later Act.

The Court of Appeal referred to the rule on this point laid down in two cases: "Every affirmative statute is a repeal of a precedent affirmative statute where its matter necessarily implies a negative; but only so far as it is clearly and indisputably contradictory and contrary to the former Act in the very matter and the repugnancy such that the two Acts cannot be reconciled" (Hill *v.* Hall, 1876, 1 Ex. D. 411); and: "Now if anything be certain it is that where there are general words in a later Act capable of a reasonable and sensible application without extending them to subjects specially dealt with by earlier legislation, you are not to hold that earlier and special legislation repealed, altered or derogated from merely by force of such general words without any indication of a particular intention to do so." (Seward *v.* Vera Cruz, 1884, 10 App. Case 59.)

The Court in applying these principles then analysed the subject matter of the two statutes. The Court pointed out that the Distress for Rent Act in section 18 dealt with a specific case where a tenant has given notice to his landlord, a notice that the landlord is bound to accept, and who then refuses to quit. This statute also enacts that the tenant so holding over shall pay to the landlord "double the rent or sum," and such double rent or sum shall be paid during all such time as the tenant "continues in possession." From this the Court drew the deduction that this sum, payable not quarterly, half-yearly or at any specific period, but so long as the tenant continued in possession, was not rent but a penal sum. Then it was pointed out that the Increase of Rent Act was passed to meet an entirely different state of things, *i.e.*, to prevent landlords from ejecting their tenants or increasing the rent. It was, therefore, held that the earlier statute was not inconsistent with the later statute, and was not repealed or suspended by the later statute, and the decision of the Court below (noted in *The Builder*, May 9, 1919) was reversed.

We must, however, point out that this decision does not affect the decision in Crook *v.* Whitbread (*The Builder*, June 27, 1919). In that case the landlord had given his tenant notice to quit, but the tenant had refused to quit, and the landlord had then sued the tenant for double rent under section 1 of the Distress for Rent Act, 1737. That section speaks of the tenant "wilfully" holding over, and it was held that this could not apply to a tenant holding under the statutory protection of the Increase of Rent Act, nor could the landlord be deemed to be a person "entitled" to possesion, and therefore, as regards this section, the Increase of Rent Act overruled it.

It now remains to be considered how the new Rent Act of this year affects the decision in Flannagan *v.* Shaw. It is not easy to answer this question with certainty, but there is this difference between the new Act and those under consideration in that case—that, whilst the latter Acts did not deal specifically with tenants holding over after notice given by them to determine the tenancy, the new Act does so. Section 5 subs. (1) provides: "No order or judgment for the recovery of possession of any dwelling-house to which this Act applies or for the ejectment of a tenant therefrom shall be made or given unless . . . (*c*) the tenant has given notice to quit and in consequence of that notice the landlord has contracted to sell or let the dwelling-house or has taken any other steps as a result of which he would in the opinion of the Court be seriously prejudiced if he could not obtain possession." Section 15 subs. (1) in general terms also speaks of tenants who hold over: "A tenant who by virtue of the provisions of this Act retains possession of any dwelling-house to which this Act applies shall so long as he retains possession observe and be entitled to the benefit of all the terms and conditions of the original contract of tenancy so far as the same are consistent with the provisions of this Act, and shall be entitled to give up possession of the dwelling-house only on giving such notice as would have been required under the original contract of tenancy or, if no notice would have been so required, on giving not less than three months' notice."

Thus the new Act does specially deal with tenants holding over, and the question, therefore, appears to be, quoting the extract set out above in the Vera Cruz case, is there an intention expressed in the later legislation to repeal or derogate from the earlier legislation? or, to cite another case relied upon in the Court of Appeal, Kutner *v.* Phillips (1891, 2 Q.B. 267), are the provisions of the later enactment so inconsistent with or repugnant to the provisions of the earlier statute that the two cannot stand together? We can only venture to say that in the case of a tenant merely holding over the legislation is clearly inconsistent with Section 1 of the Distress for Rent Act, 1737, but, as we have shown, even under the earlier Rent Acts that was held to be the case in Crook *v.* Whitbread, so this carries the point no further. In the case of a tenant holding over after giving notice to determine the tenancy, is there, however, a clear intention to repeal the penalty recoverable under the Distress for Rent Act? This point will have to be decided if it is raised, but it would appear that there is no inconsistency between Section 5 subs. 1 (*c*) of the Act of 1920 in allowing possession to be ordered in such a case where the landlord is seriously prejudiced and the penalty imposed by the Distress for Rent Act, and if so the decision in Flannagan *v.* Shaw will still apply.

### Workmen's Compensation.

The Committee which reported on workmen's compensation recommended that no change should be made in the expression which is the keynote of the Workmen's Compensation Act, *i.e.*, that the accident must arise "out of and in the course of the employment," and there was much to be said in favour of the reasoning upon which this recommendation was based, that the phrase had been the subject of so many judicial decisions that it had better remain unaltered. The Committee, however, did not draw express attention to two of the latest decisions, Bell *v.* Armstrong, Whitworth & Co., and Redfern *v.* Armstrong, Whitworth & Co., which have somewhat obscured the meaning of former decisions. These two decisions were commented upon in *The Builder* for April 16 last, but as Lord Finlay found the two cases indistinguishable and said that if one was right the other must be wrong, we desire, now that the decision in Redford *v.* Armstrong, Whitworth & Co. is fully reported (1920 A.C. 757), once more to revert to these two cases. In Redford's case a woman employed by the firm was injured on premises adjoining those on which she was engaged to work. It was the dinner hour, and the employers had a canteen in these premises to which it was optional for the workpeople to resort for their meals. The premises were connected by a door with the work premises, but this was closed during the daytime and to reach the dining place it was necessary to go into the street and enter by another door a few yards down the street. The woman had finished her dinner and was hurrying down the stairs from the dining-room to return to work when she slipped and was injured. The House of Lords (Lords Finlay and Dunedin dissenting) held that the woman was entitled to compensation as the accident happened "out of and in the course of her employment."

In Bell's case, the facts are very similar, except that in that case the woman who was killed had to cross the street to reach the canteen and was knocked down in the street, and in this case the Court of Appeal had held that she was not entitled to compensation as the accident did not arise "out of and in the course of her employment."

Lord Finlay, in his dissenting judgment, made a very complete summary of the decisions on these words, and it is to be regretted that, from the point of view of simplifying the law, his view did not prevail with the majority of the House, but we think the finding of the majority of the Lords may be explained so as not to upset certain principles laid down in former cases. In Davidson *v.* M'Robb (*The Builder*, August 2, 1918), it was laid down: "In the course of the employment does not mean during the currency of the engagement, but means in the course of the work which the workman is engaged to do and what is incident to it." Lord Finlay considered in the case under consideration that the accident to this woman did not occur in the course of her work and was not incident to it; and Lord Dunedin, who was also in the minority, took the same view.

This principle has been of great assistance in construing the above words, and it would indeed be serious if it were considered that it had been over-ruled, but we think, when the opinions delivered by the other Law Lords are considered, it will be seen that they accepted this principle, but decided the case on rather narrower grounds. Thus, Lord Sumner finds that the woman, having finished her meal, was proceeding to her work and approaching her place of work in the same premises over a means of access (the staircase) in the control of the employers. Lord Parmoor took practically the same view; whilst Lord Wrenbury, having prefaced his judgment by saying that he had long since abandoned the hope of deciding any case upon the words "out of and in the course of the employment," upon grounds satisfactory to himself or convincing to others,

found that, as the woman was hurrying to achieve punctuality down the stairs which she was allowed to use, she was injured by an accident incidental to her employment. Thus all three Law Lords bring the case within the principle that in the course of the employment does not mean during the currency of the engagement, but implies something more—a connection with the service the employee is engaged to perform, a principle which it is extremely important should be preserved intact. The reasoning of the minority would have placed the case on a broader basis and rendered the position of employers and employed clearer, for as it is this decision will be used in other cases as proving that the House of Lords intended to lay down that all persons in their dinner hour are still in the course of their employment so long as they are on any premises owned and controlled by the employers. That this is not the case is clear, for Lord Sumner himself said, in the course of his judgment, "If the canteen had been at a distance or if it had been carried on for profit the case might be different, but no opinion need be expressed about it now." Lord Sumner also recognised that Bell's case was distinguishable, for he observes: "Had the accident happened in the street, the case might well have been different."

Perhaps we have now made it clear that, although the two cases emphasise an injustice under the Act, and the finding of the majority would have avoided this inequality and assisted the decision of like cases, yet the finding of the majority proceeds on the very narrow grounds that there was evidence on which the arbitrator was justified in holding that this woman was using a means of access on the employer's premises supplied by them for the purpose, not for purposes of her own, but solely to reach the place where she was employed. In Bell's case it will be observed the woman had left her work to go to dinner and had reached the street.

## THE INDEMNITY ACT, 1920

THE Indemnity Act is a measure of some importance, as it regulates the right to compensation for certain acts done during the war in pursuance of prerogative and other powers. Like most modern Acts, it is a very difficult piece of legislation to follow. It consists of but seven sections, but they require careful consideration.

RESTRICTION ON PROCEEDINGS.—Section 1, subs. (1) provides that no action or other legal proceeding (and subs (2) includes in this a petition of right), whether civil or criminal, shall be instituted in respect of any act, matter or thing done, whether within or without His Majesty's dominions, during the war before the passing of this Act (*i.e.*, August 16, 1920), if done in good faith and done or purporting to be done in the execution of his duty, or for the defence of the realm, or the public safety, or for the enforcement of discipline, or in the public interest by any person in the service of the Crown or by any person acting under such authority, and any such proceedings, whether instituted before or after the passing of the Act, shall be discharged and made void, save that in proceedings instituted before July 20, 1920, the Court shall have jurisdiction as to costs.

There are, however, provisos to this general provision, for the subsection continues: "Provided that except in cases where a claim for payment or compensation can be brought under section 2 of this Act," this section shall not prevent (*a*) the institution or prosecution of proceedings on behalf of His Majesty or any Government department; (*b*) the institution or prosecution of proceedings in respect of any rights under, or alleged breaches of, contract, if the proceedings are instituted within one year from the termination of the war or the date when the cause of action arose, whichever may be the later; (*c*) the institution or prosecution of proceedings founded on negligence in respect of damage to person or property elsewhere than in a foreign country; (*d*) refers to the like matters in a foreign country; and (*e*) the institution or prosecution of civil proceedings respecting the validity or infringement of a patent. By subs. 3 a certificate of a Government department that the act complained of was done under authority shall be sufficient evidence of the authority, and the "good faith" shall be presumed unless the contrary is proved. Subs. (4) excepts proceedings for giving effect to a final judgment given before the passing of the Act.

It must particularly be observed that the right conferred by this section is limited by the reference to section 2, for if section 2 applies to the case, then proceedings cannot be instituted or prosecuted under the above provisos in section 1. Section 2 provides: "Notwithstanding anything in the foregoing section restricting the right of taking proceedings, any person not being a subject of a State which has been at war with His Majesty during the war and not having been a subject of such a State whilst that State was so at war with His Majesty," then par. (*a*) refers to owners of ships and cargoes, and par. (*b*) proceeds, "who has otherwise incurred or sustained any direct loss or damage by reason of interference with his property or business in the United Kingdom through the exercise or purported exercise during the war of any prerogative right of His Majesty, or of any power under any enactment relating to the defence of the realm, or any regulation or order made or purporting to be made thereunder, shall be entitled to payment or compensation in respect of such loss or damage, and such payment or compensation shall be assessed on the principles and by the tribunal hereinafter mentioned . . ." It will thus be seen that proceedings for breach of contract or in respect of rights under contracts fall within section 1, but must be instituted within the time named in the proviso (*b*). Civil proceedings founded on negligence in respect of damage to person or property also fall within section 1, but proceedings arising out of acts done in pursuance of prerogative or under the defence of the realm, &c., fall within section 2. Now we have to see how claims arising under section 2 are to be settled.

THE TRIBUNAL.—The tribunal is to be (see section 2, subs. (4)), any tribunal prescribed by any of the Defence of the Realm Regulations; where the claim is made under par. (*a*) of section 2, subs. (1), the Board of Arbitration; and in any other case the Defence of the Realm Losses Commission, hereafter to be known as the "War Compensation Court."

APPEALS.—Subs. (1) states that the decision of the tribunal shall be final, provided that the provisions as to stating a case in any enactment relating to arbitrations are not to apply, but on a point of law there may be an appeal to the Court of Appeal, and by leave of that court (but not otherwise), a further appeal to the House of Lords.

TIME LIMIT FOR CLAIM.—Notice of claim has to be given to the tribunal in such form as the tribunal may prescribe within one year from the termination of the war or the date when the transaction giving rise to the claim took place, whichever may be the later.

ASSESSING COMPENSATION.—Subs. (2) of section 2 deals with the principles upon which compensation shall be assessed. By par. (i), where the order made under any enactment relating to the defence of the realm contains any special principle for assessment of any payment (including any price to be paid) or compensation, that principle is to be adopted. By par. (ii), where the claim is under par. (*a*) of subs. (1) (relating to ships and cargoes), the compensation shall be assessed in accordance with the principles upon which the Board of Arbitration acted as set out in Part I of the Schedule to this Act. By par. (iii) in any other case the compensation shall be assessed as follows: (*a*) If the claimant would, apart from this Act, have had a legal right to compensation the tribunal shall give effect to that right, but in assessing the compensation shall have regard to the amount of the compensation to which, apart from this Act, the claimant would have been legally entitled and to the existence of a state of war and to all other circumstances relevant to a just assessment of compensation, provided that this subsection shall not give any right to compensation for indirect loss; (*b*), if the claimant would have had no such legal right, the principles adopted by the Defence of the Realm Losses Commission as set out in Part II of the Schedule are to apply. Part II of this Schedule is as follows: "The compensation to be awarded shall be assessed by taking into account only the direct loss and damage suffered by the claimant by reason of direct and particular interference with his property or business, and nothing shall be included in respect of any loss or damage due to, or arising through, the enforcement of any order or regulation of general or local application, or in respect of any loss or damage due simply and solely to the existence of a state of war, or to the general conditions prevailing in the locality, or to action taken upon grounds arising out of the conduct of the claimant himself rendering it necessary for public security that his legal rights should be infringed, or in respect of loss of mere pleasure or amenity."

It is to be observed that the limitation to direct loss or damage would not cover the claim in the De Keyser Hotel case. Lord Justice Warrington in the Court of Appeal stated the point thus: "The Crown insists that the suppliants are entitled as of right to nothing, but is willing that they should be paid *ex gratia* such sum for direct loss or damage to property or business as the Losses Commission may determine. It will be observed that this offer on the part of the Crown is confined to direct loss or damage to business or property and does not extend to the making of any payment for the occupation of the premises analogous to the payment of rent for the use and occupation."

The decision of the Court of Appeal in favour of the claimants, it will be recollected, was affirmed by the House of Lords, but now we have this principle of liability for direct damage only enforced by an Act of Parliament which will govern any future decisions.

It is only necessary here to notice one other provision of this Act. By section 3: "Nothing in the foregoing provisions of this Act shall affect the application of the Defence of the Realm (Acquisition of Land) Act, 1916, or the Acquisition of Land (Assessment of Compensation) Act, 1919, in any case where apart from this Act any of these Acts would apply."

From the above brief summary of the main provisions of this Act it will be seen that complicated questions will arise under it, and its provisions are draughted as obscurely as most modern statutes. The complaint as to the draughtsmanship of Acts is universal, but no improvement is effected. In a democracy, where every man is supposed to understand and know the law, it is a scandal that Acts of Parliament should be drafted in terms which even the courts find it impossible to comprehend, and some improvement in this system should be insisted upon.

### A Forty-hour Week.

The Directors of the Slough Trading Co., Ltd., have reduced the weekly working hours for their employees at Slough from 44 hours in six days to 40 hours in five days, without reducing their weekly earnings, thus dispensing with the four hours at present being worked on Saturdays. The Directors expect that employees will respond to their appeal for an equivalent output in the future forty-hour week as in the past forty-four hour week. In order to obviate to some extent the necessity for undue early rising and to enable the employees to return home at the same time as at present, the lunch break will be reduced from one hour to half an hour, thus enabling the working hours to be fixed as follows:—8.30 a.m. to 1 p.m., 1.30 p.m. to 5 p.m. The reduction of weekly work from 44 to 40 hours will not entail a reduction in weekly earnings. The hourly rate is to be increased so that the same can be earned for 40 hours as for 44 hours at present.

# CENTRAL HEATING AND VENTILATION.—V.

BY A. J. WELLS.

## "TWO-PIPE" AND "COMPOUND" HOT-WATER SYSTEMS.

WHEN the piping of a hot water system is so arranged that the cool return water from one radiator cannot mix with the hot flow water in the circuit pipe, but is conveyed through a return pipe directly back to the boiler, the system is known as "two pipe." By this method the drop in mean temperature of the water in the radiators, which is the undesirable feature of the one pipe system, is obviated, and radiators may have approximately the same mean temperature corresponding to the mean between the flow and return at the boiler. The disadvantage of this system, however, is that when the circulation is produced by gravity or natural means the sizes of the main and circuit pipes are determined by the radiator which is most unfavourably situated; that is, the radiator which produces the lowest circulating pressure available per unit length of pipe.

The general arrangement of a simple two pipe system is shown in Fig. 1. Assuming that no heat is emitted from the main or circuit pipes, the circulating pressure produced by the cooling of the water in the radiators is represented by

$$Cp = \frac{_{12}1\ (Dr—Df)}{Dm}$$

Where Cp = Circulating pressure in ins. of water.
i = vertical distance in ft. between centre of boiler and centre of radiator.
Dr = density of return water in lbs. per ft.³.
Df = density of flow water in lbs. per ft.³.
Dm = density of manometer water in lbs. per ft.³.

Let us assume that the flow temperature = 180° F., the return temperature = 140° F., and the manometer water = 39.1° F.;

Density of water at 180°F. = 60.56 lbs. per ft.³
" " 140°F. = 61.388 "
" " 39.1°F. = 62.425 "

then the circulating pressure generated per 1 ft. vertical distance equals—

$$12\left(\frac{61.388—60.56}{62.425}\right) = 0.16 \text{ in. water}$$

therefore the circulating pressure produced by
Rad. No. 1 = 20 × 0.16 = 3.2 in. water at 39.1°F.
No. 2 = 12 × 0.16 = 1.92 in. " "
No. 3 = 4 × 0.16 = 0.64 in. " "

The most unfavourably situated radiator on the circuit from the heating engineer's point of view is No. 3, because it produces the lowest circulating pressure, namely, 0.64 in. The main and circuit pipes must, therefore, be calculated to offer a resistance of not more than 0.64 in. to the required quantity of water, otherwise insufficient water will flow through the pipes and the heat emitted by the radiators will be reduced, or even "short circuiting" may result. It is obvious that if radiator No. 3 did not exist the sizes of the main and circuit pipes would be determined by radiator No. 2, which produces a circulating pressure three times as great as that produced by No. 3, which means that the pipe sizes could be substantially reduced. However, in practice it is often impossible to omit the radiator which demands large main and circuit pipes; but in many cases it is possible to overcome the difficulty by installing a "compound" system. This system consists of a combination of the one pipe and two pipe systems so arranged that the one pipe radiators increase the circulating pressure while the two pipe radiators prevent an excessive drop in temperature of the water in the flow main.

The general arrangement of a compound system is shown in Fig. 2, which is identical to Fig. 1, with the exception that radiator No. 1 has one-pipe connections. To find the circulating pressure for the main and circuit pipes let us assume that radiator No. 1 cools the water in the flow main from 180 deg. F. to 165 deg. F., or, in other words, increases the density from 60.56 to 60.893 lbs. per ft³. Then, if the centre of radiator No. 3 is 20ft. and radiator No. 1 is 4 ft. above the centre of the boiler, the circulating pressure available for the main and circuit pipes will be—

$$\frac{48\ (61.388—60.56)+192\ (60.893—60.56)}{62.425}$$

= 1.66 in. water.

By the arrangement of piping shown in Fig. 2 the circulating pressure available for the mains is 1.66 in. water as against 0.64 in. for the mains in Fig. 1. This is obviously a great advantage, because considerable saving can be made in the cost of labour and materials by reducing the sizes of the pipes without the aid of a pump or accelerator. It is true that, owing to lower flow temperature to radiators Nos. 2 and 3, they would have to be slightly larger than on the two-pipe system, but the reduction in the size of pipes more than covers the increase in the question of cost.

Although the compound system offers obvious advantages over the other systems, it is rarely installed because of the complicated calculations and the difficulties encountered in the design, which only the expert designer can master. If more attention is given to the theory of pipe sizing, the installations erected will be more effective and, moreover, will be cheaper to install because of the reduced sizes of pipes. A scheme accurately calculated can invariably be provided with pipes of smaller diameters than if rule-of-thumb or haphazard methods are used. It is a good plan for the contractor to base his estimate on the approximate pipe sizes and have the scheme accurately calculated when the contract is secured. By this method he will save on the cost of pipes and labour, thereby increasing his profit, and the client will have the satisfaction of obtaining a perfectly balanced system. The success of an apparatus mainly depends upon the *correct* size of the pipes which will give even distribution, and when the theory of pipe sizing has been thoroughly mastered the hundreds of thousands of pounds sterling wasted annually by using pipes of larger sizes than necessary will be saved. Many imagine that if pipes are installed two or three sizes larger than necessary the apparatus will be more effective and the results will be more successful; this is just as sensible as saying, "if a spoonful of medicine is beneficial, it is better still to take the whole bottleful."

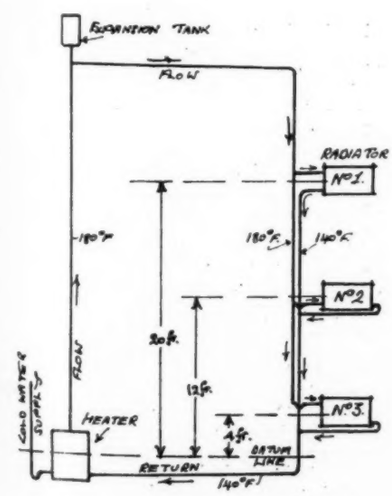



Fig. 1.

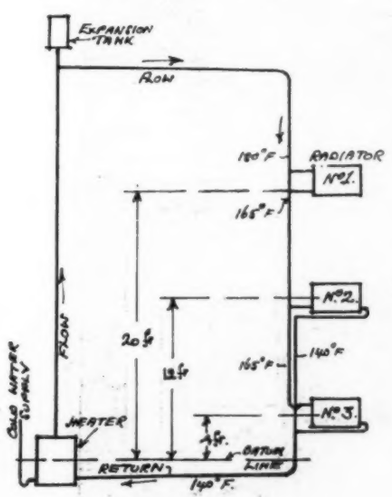



Fig 2.

## STABILITY OF CONTRACTS.

A CONFERENCE was recently held on the problem of unemployment and the possibilities of obtaining industrial stability to facilitate the acceptance and carrying out of large contracts, under the auspices of the Industrial League and Council, at the residence of Mr. Hugo Hirst, the Managing Director of the General Electric Co., Ltd. Discussion was opened by Mr. E. W. Petter, who, dealing with the position of affairs from the employers' point of view, referred to the effect of the unrest that had been disturbing industry for the past two years. Employers, not knowing from one day to the next what new demands would be made, were, he said, unable to give firm prices to contracts or even a definite date for delivery, and the result had been that contracts valuing in the aggregate millions of pounds had been taken from England and placed abroad. They could not afford to go on doing that. Now, as the contracts in hand were being completed, firms found they had not sufficient work to keep the whole of their plant in operation, and were dismissing men. Instability and loss of contracts were culminating in unemployment, and the time had arrived when workers and employers should look the whole situation frankly in the face and see whether they could not find a solution. If they could only agree to stability for a fixed period, approximately twelve months, during which time all should agree to carry on under existing standards, he had no hesitation in saying the outcome would be that the wave of unemployment would be obviated, industry would speedily recover and absorb the whole of the unemployed, the cost of living would be automatically and materially decreased, and at the end of the year the workers, providing they worked conscientiously, would find they would be able to maintain not only their present rate of pay but its relative value would be considerably enhanced, as the value of the pound would be brought considerably nearer to an economic level.

There was, we understand, unanimity of opinion as to the need for stability, and the only variance of opinion expressed was in regard to the best means which could be adopted to attain that end. It was also emphasised and generally agreed that workers should be given a larger share in the management of the industry in which they were engaged and a proportionate participation in any increased profits derived as a result of the united efforts made.

### The Royal Society of British Artists.

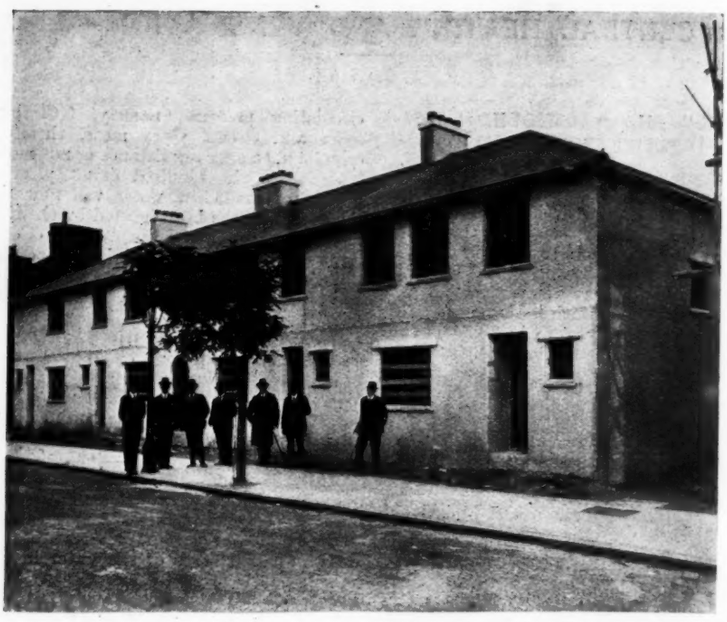
Mr. O. Greenwood was last week elected an Associate of the Royal Society of British Artists. There were sixty candidates for admission.

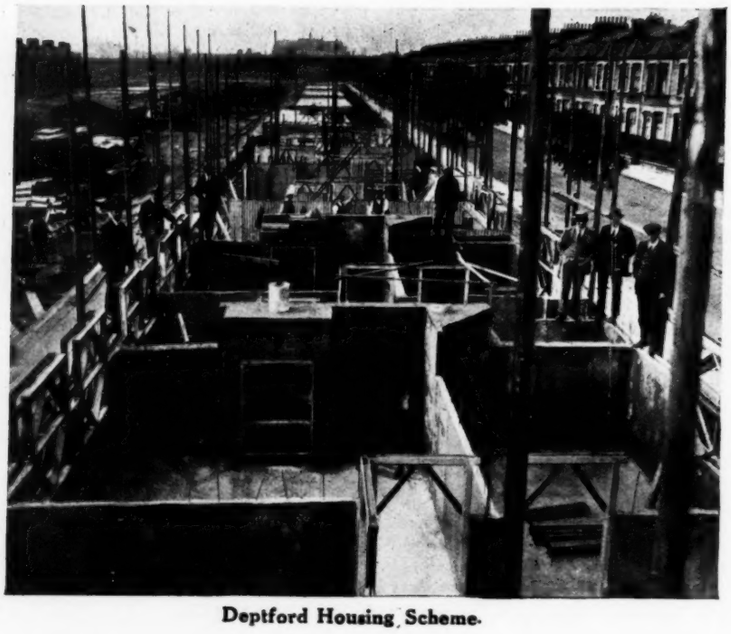
# DEPTFORD HOUSING SCHEME.

THE housing scheme of the Deptford Borough Council at Brockley (Mr. H. Morley Lawson, Borough Surveyor), as approved by the Ministry of Health, consists of a total of 59 houses, of which 19 are Class "A" (non-parlour type), and 40 are Class "B" (parlour type). The whole of the roads, sewers, &c., are now in course of construction by direct labour.

The construction adopted is as follows:—

FOUNDATION AND RAFT.—Excavation is carried down to the required depths and a concrete base (1 ft. 8 in. wide by 1 ft.) is put in, consisting of ballast concrete mixed 1 : 8. Upon this, 8 in. plinth walls are erected in 1 : 6 concrete between timber shuttering. These are carried up to the underside of the raft. The raft consists of a 7 in. thickness of ballast concrete reinforced with a double reinforcement of "B.R.C. Fabric" 1 in. from the top and 1 in. from the bottom. The raft is brought out flush with the outside of the plinth walls, and the space below the raft and between the walls is filled in with dry filling thoroughly rammed. The top of the concrete raft forms the floor level after being finished with an approved jointless flooring. Party walls are carried up in the same way as the external plinth walls, but the internal walls are built up off the raft without any independent footings.





Deptford Housing Scheme.

SUPERSTRUCTURE.—The whole of the walling in connection with the superstructure is constructed on the monolithic concrete system of hollow walls, by means of the "Forrester-Marsh" patented system of wall ties and metal shuttering. The external walls consist of a 2½ in. outer leaf of reinforced Thames ballast concrete and an inner leaf of 3 in. reinforced clinker concrete with a 2½ in. cavity between. All concrete for walls is mixed in the proportion of 1 : 6. Shuttering is first fixed to a uniform height of 5 ft., and all door and window frames fixed in position. The concrete, which is mixed to a thin consistency, is then poured in to a depth of 2 ft. and thoroughly rammed. This process is repeated until the 5 ft. height is reached The shuttering remains for at least four days from the date of the final pouring, after which it is removed and a further 5 ft. height of shuttering is fixed. This second tier of shuttering overlaps the concrete beneath by about 6 in. The process is repeated until the wall reaches the required height, all walls being carried up uniformly, including the division walls, fire-place, jambs, &c. Party walls are constructed in a similar manner, but are made of 8½ in. solid clinker concrete.

REINFORCEMENT.—Throughout all the walls reinforcement in the form of ¼ in. steel bars is inserted both vertically and horizontally as the work proceeds. The spacing in these party walls, internal walls and the inner leaf of external walls is every 24 in. vertically and 15 ins. horizontally, and in the outer leaf of external walls every 12 in. vertically and 15 in. horizontally. The inner and outer leaf of the external walls are tied together by galvanized-iron ties spaced every 2 ft. vertically and horizontally throughout the wall. The patent system of shuttering adopted provides for the proper hanging and spacing of the reinforcement, so that it is kept at equal distances, and is carried up the centre of the wall. Corner stirrups are also built in at all angles and division walls. The top of the wall at the eaves is finished with a solid wood wall plate to the full width of the wall, firmly bolted down into both leaves of the hollow wall.

COST.—From analyses which have been kept for the first blocks it would appear that the walling itself works out at approximately the same price as brickwork per yard super., allowing £50 per rod for brickwork. It is anticipated, however, that, as the work proceeds, the men will become more efficient in erecting the shuttering, which will have the effect of expediting the work with a corresponding reduction in the cost of labour.

The houses are being erected by Messrs. Edwards Construction Co., Ltd., of Westcombe-hill, S.E. 3. The shuttering is supplied by Forrester-Marsh Patents, 33a, Savile-row, W. 1.

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## what he thinks of his

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HEAD OFFICE,
16. REGENT STREET,
LONDON, S.W.1. 14th Sept. 1920.
ENGLAND.

Frederic Coleman, Esq.,
The Adamite Company Limited,
Regent House, Regent Street, W.1.

Dear Mr. Coleman,

I am enclosing two pictures of the Anti-Hydro floors I ordered for my new factory building in Ladbroke Grove.

My experience with your Anti-Hydro floors has proved that they are beyond question of high quality. Their hardness is surprising. That we could use them in less than seventy-two hours after they were laid was of real value to us. A steel-wheeled trailer, heavily loaded, made no more impression on the surface of the newly-laid floor than did the rubber-tyred lorry to which it was attached.

My factory at South Row, Ladbroke Grove, W. while of modest proportions, is equipped in as modern a manner as it is possible to equip a plant of its type. The question of the floor was an important one to us, as hundreds of lorries and heavy tractors pass over these floors every month.

Yours very truly,
H. G. Burford

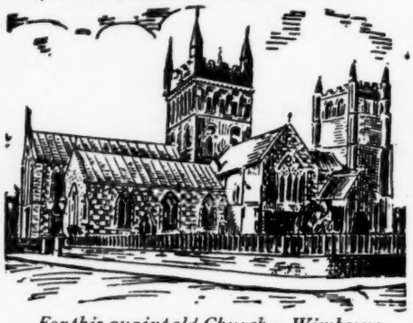
Indoors and out, "ANTI-HYDRO" protects concrete from water and wear. It matters not a bit how many thousands tramp over floors or along corridors hardened with "ANTI-HYDRO." Such floors cannot wear out, dust away, or disintegrate.

("ANTI-HYDRO" is manufactured by The Anti-Hydro Waterproofing Company of New York.)

The Adamite Company, Limited,
Regent House, Regent Street (Near Oxford Circus), London, W.1

# Church Bells

*"Like Sweet Bells jangled,*
*Out of tune and harsh."*—SHAKESPEARE.



*For this quaint old Church—Wimborne Minster—we recast eight bells and supplied two new ones—all in perfect tune.*

SHAKESPEARE had no liking for bells that were out of tune. There is no reason, however, why anything but sweet music should issue from the belfry tower, for Messrs. Gillett & Johnston, the Bell-founders of Croydon, have replaced th old method of haphazard tuning by one so scientific that every bell, even the smallest, is sent out perfect in tune.

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# SOUTHWARK STREET, LONDON, S.E.

# HOUSING AND TOWN-PLANNING NOTES.

### Direct Labour.

The East Ham Borough Council has decided to erect 20 Type "A" Plan No. 166 houses by direct labour, the cost not to exceed £950 per house, based on prices ruling on August 31 last.

### Land for Housing.

Sir John Oakley has issued his award as arbitrator in a case between Lord Forster and the London County Council in regard to the compulsory acquisition of 134 acres of land, situated at Bellingham, near Catford, for housing schemes. The claim was for £79,000, while the County Council put forward a valuation of £30,619. By the arbitrator's award, the County Council is to pay Lord Forster the sum of £31,529, and the claimant is to bear his own costs, and pay the costs of the County Council so far as such costs were incurred after an offer for the land had been made by the Council.

### Increased Property Values.

We take the following from the *Manchester Guardian*:—"Extraordinary bidding took place at Ormskirk at a sale of a freehold cottage at Rufford, a small village five miles from Ormskirk, with vacant possession. Bidding commenced at £400 and rose rapidly, there being no fewer than forty-four bids before the cottage was knocked down for £1,210. The cottage cost less than £300 to build nearly fifty years ago."

### WEEKLY HOUSING RETURN.

Progress of housing schemes up to October 16: Schemes submitted, 11,159; approved, 8,281. Lay-out schemes submitted, 6,384; approved, 5,799. House-plans submitted, 265,072 houses; approved, 250,101. Tenders submitted, 163,436 houses; approved, 148,158. Contracts have been signed for 112,928 houses. Schemes dealt with during the week ended October 16: Schemes submitted, 44. Lay-outs submitted, 41; approved, 41. House-plans submitted, 1,532; approved, 1,610. Tenders were submitted for 3,372 houses and approved for 1,787. These included the following:—

### Applications.

SITES.

URBAN.—Leeds, 18 acres; Smethwick, 42.35.

LAY-OUTS.

URBAN.—Alvaston and Boulton, Ely, Glyncorwg, Leeds, Leicester, Llantarnum, Padiham, Stourbridge, Usk, Wakefield.

RURAL.—Barrow-on-Soar, Battle, Bradfield, Bridlington, Cricklade and Wootton Bassett, Downham, E. Retford, Isle of Wight, Newent, Newmarket, Norham and Islandshires, Ongar, Penybont, Rye, Samford, Spilsby, Stratford-on-Avon, Wellington (Som.), Wetherby.

COUNTY COUNCILS.—Isle of Ely, Yorkshire (E. Riding).

HOUSE-PLANS.

URBAN.—Alvaston and Boulton, 40 houses Bracebridge, 6; Callington, 5; Carlisle, 280, Ely, 56; Feltham, 50; Hornsea, 11; Leeds 222; Leicester, 8; Llanelly, 6; Neston and Parkgate, 38; Padiham, 11; Stourbridge, 177; Usk, 6.

RURAL.—Amesbury, 50 houses; Barrow-on-Soar, 34; Battle, 12; Bridlington, 8; Cricklade and Wootton Bassett, 4; Downham, 6; E. Westmorland, 5; Foleshill, 20; Liskeard, 2; Long Crendon, 8; Luton, 6; Newent, 6; Newmarket, 6; Newport Pagnell, 4; Ongar, 8; Potterspury, 2; Rotherham, 178; Samford, 8; Stratford-on-Avon, 4; Thorne, 8; Wellington (Som.), 4.

COUNTY COUNCILS.—Isle of Ely, 12; Lancashire, 2; Oxfordshire, 1; Yorkshire (E. Riding), 2.

### Approvals.

SITES.

URBAN.—Barking Town, 10.71 acres.
RURAL.—Rotherham, 10 acres.

LAY-OUTS.

URBAN.—Cottingham, Ely, Gellygaer, Maidstone, Penge, Pontypridd, Portsmouth, Stourbridge, Swansea.

RURAL.—Barrow-on-Soar, Boston, Bridlington, Cricklade and Wootton Bassett, Dartford, Downham, E. Ashford, E. Retford, Kiveton Park, Malling, Newent, Newmarket, Norham and Islandshires, Northallerton, Ongar, Romsey, Samford, Spilsby, Stratford-on-Avon, Wellington (Som.), Westbourne, Wetherby.

COUNTY COUNCILS.—E. Sussex, Isle of Ely, Lancashire, Yorkshire (E. Riding).

HOUSE-PLANS.

URBAN.—Bedwas and Machen, 128 houses; Bracebridge, 6; Brandon and Byshottles, 238; Ely, 56; Feltham, 50; Fleet, 6; Hornsea, 11; Maidstone, 12; Newport Pagnell, 10; Portsmouth, 12; Southwick, 28; Stourbridge, 177.

RURAL.—Amesbury, 50 houses; Ampthill, 2; Barrow-on-Soar, 34; Bridlington, 8; Chepstow, 10; Clown, 8; Cricklade and Wootton Bassett, 4; Downham, 6; E. Ashford, 8; Foleshill, 20; Helston, 10; Liskeard, 8; Luton, 6; Malling, 14; Newent, 30; Newmarket, 6; Newport Pagnell, 8; Northallerton, 30; Ongar, 8; Potterspury, 2; Romsey, 4; Rotherham, 178; Samford, 8; Stratford-on-Avon, 4; Thorne, 343; Wellington, 4; Westbourne, 4.

COUNTY COUNCILS.—E. Sussex, 2; Isle of Ely, 12; Lancashire, 2; Yorkshire (E. Riding), 1.

### Tenders Approved.

URBAN.—Bermondsey, 30 houses; Bromyard, 10; Chingford, 72; Chorley, 47; Crewe, 14; Huddersfield, 32; Jarrow, 148; Kensington, 40; Kingsbridge, 6; Ross, 36; St. Pancras, 190; Shoreditch, 40; Warwick, 146; Wells, 12.

RURAL.—Billericay, 6 houses; Bosmere and Claydon, 10; Bourne, 6; Brailes, 8; Bridgwater, 12; Bumpstead, 6; Cardigan, 8; Chester-le-street, 400; Clown, 8; Cookham, 12; Cricklade and Wootton Bassett, 2; Crowmarsh, 6; Easthampstead, 34; Eaton Bray, 4; Fareham, 60; Gnosall, 18; Godstone, 46; Gower, 8; Halstead, 20; Hemel Hempstead, 4; Henley, 6; Hollingbourne, 12; Long Crendon, 8; Luton, 34; Malling, 14; Meriden, 100; Potterspury, 2; Samford, 6; Shardlow, 20; Warmley, 10; Wellingborough, 8; Wycombe, 4.

### Building with Unskilled Labour.

The members of the Copmanthorpe (Yorks.) Y.M.C.A. are erecting a new institute in the village entirely with unskilled labour, some 20 men and 10 ladies being engaged on the work. The building, which is to consist of a main hall 60 ft. by 20 ft., and an annexe 40 ft. by 12 ft., is being built of hollow concrete blocks made in moulds without the use of machines.

### Steel Office Furniture.

Messrs. Roneo, Ltd., the makers of the well-known "Roneo" duplicating machine, have now taken up the manufacture of steel office cabinets for documents, filing, &c., at a large new factory which has just been opened at Romford. Among the advantages claimed for steel office furniture is that it is not affected by variations of climate, it is impervious to the attacks of the white ant, and is practically indestructible, and is, therefore, an important step in the progress of office hygiene and must as a result promote health. The drawers of the steel filing cabinets run on ball bearings. Another important advantage is that it is fire-resisting, and the documents in a steel filing cabinet or desk receive practically the same protection from fire that they would if locked in a steel safe. The walls of the cabinets are built up in two thicknesses of steel with an air space between, and it is necessary for the outer thickness to become red hot before charring of the papers preserved in their interior can take place.

# SPECIFICATION FOR BITUMINOUS MATERIALS.

THE Ministry of Health has agreed to the following specification for bituminous roofing materials and dampcourses for houses to qualify for the Government subsidy:—

FOR ROOFING SLOPING BOARDED ROOFS TO SEMI-TEMPORARY HOUSES.—(1) One layer "2-ply" self-finished bitumen roofing weighing not less than 3½ lb. per sq. yard. Made from fibre base weighing not less than 16 oz. per sq. yard. Saturated and coated with pure bitumen, guaranteed free from all tar products, and to contain no filling matter. Surface finished with chalk or talc, without sand or any other weight-adding material. To be laid with a lap joint of not less than 2 in., made good with bitumen cement or mastic. Nails to be ¾ in. galvanised wire clouts or ¾ in. copper wire clouts. The work to the following roofs to be carried out in all cases by the manufacturers.

(2) Two layers of sheet asphalte roofing, each weighing not less than 4 lb. per sq. yard. Made from fibre base weighing not less than 8½ oz. per sq. yard. Saturated and coated with pitch and tar compound. Surface finished with sand. First layer to be nailed to boarding and second layer bedded on first with hot bituminous mastic.

FOR ROOFING PERMANENT HOUSES: BOARDED FLAT ROOFS.—(1) Two layers "2-ply" self-finished bitumen roofing, each weighing not less than 3½ lb. per sq. yard. Made from fibre base weighing not less than 16 oz. per sq. yard. Saturated and coated with pure bitumen guaranteed free from all tar products and to contain no filling matter. Surface finished with chalk or talc without sand or any other weight-adding material. The first layer nailed to boarding with ¾ in. galvanised wire clouts or ¾ in. copper wire clouts. The second layer built on the first with hot bitumen compound. In city areas, the surface to be dressed with bitumen compound and covered with 2 in. of gravel.

(2) Three layers of sheet asphalte roofing, each weighing not less than 4 lb. per sq. yard. Made from fibre base weighing not less than 8½ oz. per sq. yard. Saturated and coated with pitch and tar compound. Surface finished with sand. The first layer nailed to the boarding. The other two layers bedded in hot bituminous mastic. The surface to be finished with a dressing of the hot mastic and sand. In city areas, the surface to be finished with a dressing of the hot mastic and 2 in. of gravel or 2 in. of coke breeze concrete.

FOR DAMP COURSES.—(1) Pure bitumen dampcourse made with hessian canvas base, coated both sides with a sufficient thickness of pure bitumen guaranteed free from all tar products, without sand or filling of any sort. The finished dampcourse to weigh not less than 5½ lb. per sq. yard.

(2) "3-ply" self-finished dampcourse made from fibre base weighing not less than 21 oz. per sq. yard. Saturated and coated both sides with pure bitumen guaranteed free from all tarred products and to contain no filling matter. Surface finished with chalk or talc without sand or any other weight-adding material. The finished dampcourse to weigh not less than 4 lb. per sq. yard.

(3) Sheet asphalte dampcourse made from fibre base weighing not less than 22 oz. per sq. yard. Saturated and coated both sides with pitch and tar compound and sanded. The finished dampcourse to weigh not less than 12 lb. per sq. yard.

(4) Sheet lead and bitumen dampcourse made from sheet lead weighing 3½ oz. per sq. ft. coated with pure bitumen and bedded between two layers of sheet asphalte finished off with sand. The finished dampcourse to weigh not less than 10 lb. per sq. yard.

The Ministry expresses the hope that the trade itself will consider the possibility of marking all dampcourses that are guaranteed to comply with the above specifications with a distinguishing registered mark which would recur on the dampcourse at intervals. This would greatly simplify the examination and inspection of dampcourses, and safeguard the public against inferior materials.

# THE BUILDING TRADE.

## THE ONLY WAY.—III.

By Major E. A. Pells, R.E., A.M.I.E.E., M.S.M.A.

### Factors in Efficiency.

Efficiency in industry can never be a fixed value, nor an ultimate end, for one never appears to arrive at the maximum; better ways are continually being evolved and greater efficiency obtained. In the solving of any problem we find that definite factors must enter into the final calculations to obtain an ultimate result, but whereas some factors may be ignored for all practical purposes, yet others are of such paramount importance that not only must they be the subjects of very careful study but they must be brought to very accurate values; then we meet others of such a variable character that no definite fixed value can be placed on them, and yet the correct solving of the problem depends largely upon their values being correctly estimated—so that in considering the final equation a great deal depends upon the ability and experience of the calculator.

In efficiency the most important and yet most uncertain factor is that of the human element, for affecting this factor we have ability, energy, industry, reliability, and temper, all having a direct effect upon the final value. As affecting these characteristics of the human factor: Ability is dependent upon training and systematic tuition; energy upon proper feeding at correct times and properly-calculated rest periods; industry can be improved by equitable wage systems providing an incentive; reliability by careful inspection of work, and if all the foregoing conditions are at a satisfactory level then it follows that good conditions and environment automatically produce a good temper. However much the work in hand can be systematised, flesh and blood should never be treated as machinery; overspeed attained by bullying drivers is worse than underspeed through lack of knowledge, for the best working pace is that at which the worker can thrive continually with satisfaction. The next factor, time, is one which must and can be reduced to the most accurately definite values. Minutes and seconds must be most carefully observed and valued, as, unless this is done, the remainder of the work in the direction of efficiency can be rendered valueless. Waste time must be closely watched and all unnecessary waste eliminated, whilst properly-planned rest periods should be arranged. Upon this factor must be based to a great extent those standards from which the efficiency of the worker can be calculated, and which constitute the basis upon which all good efficiency work must rest.

Our two next factors are tools and plant. Of these, tools are usually supplied by the worker, and it may be considered that their condition is no concern of the employer; but they constitute quite an important factor in the problem before us, and one upon which the efficiency of the individual depends, so, therefore, must be a matter for the attention of the employer. Plant is the concern of the employer, and if the workman is to see that he has the best tools obtainable for the job, the best plant must be provided.

There are many minor factors which must receive due consideration, such as the situation of the works in relation to the workers' homes. Where considerable distances have to be travelled, the consequent fatigue shows in the work results. There is also the undoubted fact that the crowded state of dwellings often results in ill-health and lack of energy.

The method of doing the work is another factor which must receive careful attention. The question often arises: Is the workman the best person to decide the best way of doing things? The old type of manager said: "Put the workers on a piece rate and they will soon find the best way!" This method is not to be considered in the light of present-day knowledge, for the odds are against the best way being found. It is a well-known fact that when a man is being trained to compete for some premier honour in any kind of sport he is not left to find out the best way; every movement is carefully taught and scrutinised and every muscle trained. So it should be in industry; every movement must be noted, and all unnecessary motions cut out, when it will be found that the final results are quite startling, for one has got so used to it that the amount of waste effort expenditure going on unnoticed cannot be appreciated.

Concomitant with the foregoing, an important factor is the method of supply of materials, so that no stooping or other movements are necessary beyond those usefully utilised in the actual work in hand. In the study of efficiency, as in the solving of any other problem, it is not advisable to cast out any factor until it has been proved that it is of no practical value in assisting in the solution or evolution of the matter in hand. So by the careful marshalling of figures and facts we shall soon find ourselves making headway towards the goal of increased output by the elimination of waste time and effort, always remembering that the best results cannot be obtained without the assistance and sympathy of the worker, and, therefore, unless we have a thorough appreciation of the human factor, our efforts in the direction of efficiency may fall to the ground.

## ELECTRICITY IN SMALL HOUSES.—V

### LABOUR-SAVING DEVICES.

Amongst the many services that electricity can render in the small house, not the least is that of saving manual labour. It is in such dwellings that the domestic servant, scarce and costly in these days, is rarely to be found, and the housewife is compelled to depend almost entirely on her own resources; hence it is also in such dwellings that labour-saving devices are pre-eminently welcome, and it is in this respect that electricity stands unique, for no other agency can contribute to the comfort and relieve the burden of the housekeeper to anything like the same extent.

In the last article we mentioned the saving in labour resulting from the use of electricity for heating and cooking, due to the absence of smoke, fumes, dust, ashes and soot where it is employed, and the consequent reduction in the amount of cleaning required in the household. We shall now consider the application of electricity to domestic operations in which its labour-saving functions are more directly manifest.

Foremost amongst these, beyond question, is ironing. Women who have experienced the ease and rapidity with which the electric iron enables them to get through their work unanimously declare that they would rather part with any other aid than with the electric iron. Ready for use almost at a moment's notice, maintained at a constant temperature without interruption for re-heating, and always retaining a brightly polished working surface (a most important factor), the electric iron eliminates waste of time and labour, and makes ironing a pleasure. We emphasise its importance because, next to electric light, the electric iron is the most useful application of electricity in the small house; it is within the means of even the needy, and it requires so little power that half a day's ironing only consumes one Board of Trade unit. An ordinary domestic iron can safely be connected to a lamp-holder by means of an adapter. Many excellent patterns are on the market, and they have only one weak point—the connection of the flexible conductor to the iron, which in time wears out. To prolong its life, the flex is usually supported for a few inches by a spiral spring through which it passes; it is a good plan also to suspend the flexible from a point directly over the ironing table, so that the wear on it shall be reduced to the minimum. It is desirable that a small pilot lamp should be alight whilst the iron is "on," to indicate the fact, for if it is not cooled by use it may attain an unduly high temperature; this precaution, however, is rarely observed.

The next most useful device is the electric washer, an importation from the United States, where it has been in course of development for many years, owing to the high cost of domestic help. This machine, which is made in a variety of forms, dollies or otherwise agitates the clothes in a wash-tub, after which they are passed through a wringer, driven by an electric motor and mounted at the side of the wash-tub. Owing to the speed with which it does its work, and the use of electric power, the washer is a labour-saving device of the first rank. Unfortunately, it is so costly (some £60) that it is not at present likely to find a place in many artisans' dwellings. However, arrangements are being made to manufacture one of the best American washers in this country at about half the price named above.

In the third place may be put the electric suction cleaner, which, like the iron, can be connected to a lampholder, as it takes a trifling current. This device has manifold uses, not only for removing dirt by "suction" but also for blowing dust out of places awkward to get at; unlike the common "duster," it does not merely move the dust from one thing to another, but carries it away in a bag. Its virtues are too well known to require further reference—it is emphatically a labour-saving device.

In the small house the sewing-machine is a necessity, and fortunately the cost of an electric machine is not much greater than that of the ordinary type, while the cost of running it is very small, so that the artisan's wife may well enjoy its benefits. Only those who have used a power-driven machine can appreciate the great saving of time (in addition to labour) that it makes possible.

We might refer to many other devices, such as the ironing machine, the dish-washer, the knife-cleaner, the boot-polisher, &c., driven by electricity, but these have little chance of entering the small house; we must, however, mention the electric "kitchen aid," because, while taking a trifling amount of power, it performs so many and so varied functions that no one who can afford to purchase it should be without it. This ingenious machine grinds coffee, chops vegetables, mixes sauces, minces meat, makes sausages, beats eggs —indeed, its uses are almost unlimited. It is no new thing, but a well-tried piece of apparatus; not only a labour-saver, but also a food economiser—it is claimed that, owing to the avoidance of waste, the machine pays for itself in six months.

As in the case of cooking and heating installations, though these motor-driven apparatus consume much less energy than the former class, an electricity meter is necessary where they are used. They do not, however, require very heavy wiring, as none of them use a large amount of power.

### Expediting Housing Schemes.

It is reported that employers and employees of the building trade in Salisbury have agreed on a scheme whereby unemployed ex-Service men may work on the public building scheme during the winter. It is proposed that the Salisbury Town Council should undertake the erection of 20 houses on which unskilled ex-Service men should work under the direction of a few skilled operatives. The whole work will be supervised free of charge by an advisory committee consisting of three employers and three employees. The masters have agreed not to employ on subsequent work semi-trained men until all skilled men in the city have found employment. The Town Council, it is stated, has sanctioned the scheme, provided the Ministry of Labour will refund any excess in the cost of this scheme over the cost of contract-built houses.

### A New Artificial Stone.

We learn from *The American Architect* of a new artificial stone, a Swiss patent, said to cost only one-third the price of ordinary artificial stone. This may be inspected at the Bureau of Foreign and Domestic Commerce. Have we any machinery in existence for bringing matters of this kind to the notice of persons interested in this country?

### A Specification for Slating.

The Structural Service Bureau of Philadelphia has recently issued a basic specification for slating, including information on colour grading and costs. The objects of this Bureau are stated to be the reduction of building costs by standardising, prevention of waste and general information, and its efforts are to be directed at considering the view point of designers, producers and owners, and there is, no doubt, much good work to be done in this direction.

### The Rate of Bricklaying.

The Housing Committee of the London County Council states in its report that the average number of bricks being laid in connection with the Council's housing schemes varies from 350 to 400 per day. "These matters," adds the report, "require discussion," and the Industrial Council for the Building Industry is to be approached on the subject.

## RATES OF WAGES IN THE BUILDING TRADE.

The following are the present rates of wages in the building trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur:—

| | Masons. | Bricklayers. | Carpenters, Joiners. | Plasterers. | Slaters. | Plumbers. | Painters. | Masons' Labourers. | Bricklayers' Labourers. | Plasterers' Labourers. |
|---|---|---|---|---|---|---|---|---|---|---|
| Aberdare | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Accrington | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0–2/0½ |
| Altrincham | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0–2/0½ |
| Ashton-under-Lyne | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/5 | 2/4 | | | 2/0–2/0½ |
| Barnsley | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Barrow-in-Furness | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0–2/0½ |
| Barry | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Bath | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Bedford | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Birkenhead | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0½ |
| Birmingham | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/5 | 2/4 | | | 2/1 |
| Bishop Auckland | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Blackburn | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0–2/0½ |
| Blackpool | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0–2/0½ |
| Bolton | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/3 | 2/4 | | | 2/0–2/0½ |
| Bournemouth | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Bradford | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Bridgwater | 1/10½ | 1/10½ | 1/10½ | 1/10½ | 1/10½ | 1/10½ | 1/10½ | | | 1/7½ |
| Brighton | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Bristol | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Burnley | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0–2/0½ |
| Burton-on-Trent | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | | | 1/11½ |
| Bury | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0–2/0½ |
| Cambridge | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Cardiff | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Chatham | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | | | 1/8 |
| Chelmsford | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Cheltenham | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Chester | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | | | 1/10½–1/11 |
| Chesterfield | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Colchester | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Coventry | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Crewe | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | | | 1/10½–1/11 |
| Darlington | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Derby | 2/1 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Doncaster | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Dudley | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Durham | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 1/10½ | 2/2½ | | | 1/11½ |
| East Glam. and Mon. Valleys | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Exeter | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Folkestone | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | | | 1/8 |
| Gloucester | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Grantham | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/3 | | | 1/11½ |
| Grays | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Grimsby | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Great Yarmouth | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | | | 1/8 |
| Guildford | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | | | 1/8 |
| Halifax | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Harrogate | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Hartlepools | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Hastings | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Hereford | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | | | 1/8 |
| Huddersfield | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Hull | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Ipswich | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Lancaster | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Leamington Spa | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0–2/0½ |
| Leeds | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | | | 1/11½ |
| Leicester | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Lichfield | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Lincoln | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | | | 1/11½ |
| Liverpool | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Llanelly | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0½ |
| London | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Loughborough | 2/4 | 2/4 | 2/4 | 2/4 | — | 2/4½ | 2/3 | | | 2/1 |
| Luton | 2/- | 2/- | 2/- | 2/- | 2/4 | 2/4½ | 2/4 | | | 2/1 |
| Maidstone | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | | | 1/9 |
| Manchester | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Mansfield | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/3 | 2/2½ | | | 2/0–2/0½ |
| Merthyr Tydfil | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/3 | 2/4 | | | 1/11½ |
| Middlesbrough | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Newcastle-on-Tyne | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Newport, Mon. | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Northampton | 2/2½ | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Norwich | 2/- | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | | | 1/11½ |
| Nottingham | 2/4 | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Oldham | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Oxford | 2/- | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0–2/0½ |
| Plymouth | 2/1 | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Pontypridd | 2/4 | 2/1 | 2/1 | 2/1 | 2/1 | 2/1 | 2/1 | | | 1/10 |
| Portsmouth | 2/- | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Preston | 2/4 | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Reading | 2/- | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0–2/0½ |
| Rochdale | 2/4 | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Rochester | 1/11 | 2/4 | 2/4 | 2/4 | 2/4 | 2/5 | 2/4 | | | 2/0–2/0½ |
| Rugby | 2/2½ | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | 1/11 | | | 1/8 |
| St. Albans | 2/- | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | | | 1/11½ |
| St. Helen's | 2/4 | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/8 |
| Scarborough | 2/2½ | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0–2/0½ |
| Sheffield | 2/4 | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | | | 1/11½ |
| Shrewsbury | 2/2½ | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Southampton | 2/- | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 1/10½ | 2/2½ | | | 1/11½ |
| Southend-on-Sea | 2/0½ | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Southport | 2/4 | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 1/11½ | | | 1/9 |
| South Shields | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/- | 2/4 | | | 2/0–2/0½ |
| Stockport | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Stockton-on-Tees | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0–2/0½ |
| Stoke-on-Trent | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Stroud | 2/- | 2/- | 2/- | 2/- | 2/2½ | 2/2½ | 1/10½ | | | 1/11½ |
| Sunderland | 2/4 | 2/4 | 2/4 | 2/4 | 2/- | 2/- | 2/- | | | 1/9 |
| Swansea | 2/- | 2/- | 2/- | 2/- | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Taunton | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Torquay | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Wakefield | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Walsall | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | | | 1/11½ |
| Warrington | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0–2/0½ |
| West Bromwich | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/1 |
| Wigan | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | 2/4 | | | 2/0–2/0½ |
| Windsor | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | 2/- | | | 1/9 |
| Wolverhampton | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | | | 1/10½ |
| Worcester | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | | | 1/11½ |
| York | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | 2/2½ | | | 1/11½ |

# CONTRACTS, COMPETITIONS, &c.

**For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number. Contracts xxx; Competitions iv; Public Appointments lx; Sales by Auction lxiv. Certain conditions beyond those given in the following information are imposed in some cases such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.**

***The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where, quantities, forms of tender, &c., may be obtained.***

## BUILDING AND PAINTING.

OCTOBER 30.—**Avoch.**—HOUSES.—Erection of 10 houses at Avoch, for the Black Isle District Committee of the Ross and Cromarty C.C. Mr. D. Matheson, architect, Dingwall.

OCTOBER 30.—**Altofts.**—PAINTING.—For painting schools during Xmas holidays. Mr. A. Batley, Oakleigh, Altofts, Yorks.

OCTOBER 30.—**Barnard Castle.**—HOUSES.—Erection of a number of houses at Middleton-in-Teesdale, Woodland, Cockfield, Staindrop, and Ingleton, for the R.D.C. Mr. Thos. W. Bainbridge, Clerk, Union Offices, 19, Galgate, Barnard Castle. Deposit £2 2s.

OCTOBER 30.—**Cromarty.**—HOUSES.—Erection of six working-class houses of 4 rooms each, for the T.C. Mr. D. Matheson, architect, Dingwall.

OCTOBER 30.—**Edinburgh.**—HOUSES.—Erection of 310 houses, at Saughtonhall-drive, for the T.C. Messrs. R. & A. K. Smith, surveyors, 44, Queen-street, Edinburgh.

OCTOBER 30.—**Middleton.**—HOUSES.—Erection of 36 houses, for the T.C. Borough Engineer, Town Hall, Middleton. Deposit £2 2s.

NOVEMBER 1.—**Aberdeen.**—HOUSES.—Erection of 28 blocks, comprising 62 houses, at Stoneywood, for the C.C. Mr. Harbourne MacLennan, architect, 16, Bridge-street, Aberdeen.

NOVEMBER 1.—**Alton.**—HOUSES.—Erection of 10 houses on the Chauntsingers Estate, for the U.D.C. Surveyor, Town Hall, Alton. Deposit, £2 2s.

NOVEMBER 1.—**Bradfield.**—HOUSES.—Erection of two or three houses at Tutts Clump, Bradfield, for the R.D.C. Mr. Basil Sutton, architect, Lambourn, Berks.

NOVEMBER 1.—**Builth Wells.**—HOUSES.—Erection of 24 houses at Tanhouse and Castle-roads, for the U.D.C. Mr. Telfer Smith, architect, Builth Wells. Deposit, £3 3s.

NOVEMBER 1.—**Chelmsford.**—CONVERSION.—Conversion of Old Court, Springfield, Chelmsford, into offices for the County Surveyor and the County Architect. County Architect, 79, Duke-street, Chelmsford. Deposit, £2 2s.

NOVEMBER 1.—**Cleckheaton.**—PAINTING.—Painting &c., at schools, for the E.C. Mr. A. Rothera, Surveyor, Town Hall, Cleckheaton.

NOVEMBER 1.—**Doncaster.**—HOUSES.—Erection of 170 houses of various types, for the T.C. Mr. R. E. Ford, Housing Surveyor, 3, Priory-place, Doncaster. Deposit £2 2s.

NOVEMBER 1.—**Grays.**—COTTAGES.—Erection of 12 cottages, Cromwell-road, Grays, for the Essex C.C. County Architect, 79, Duke-street, Chelmsford. Deposit £2 2s.

NOVEMBER 1.—**Heanor.**—HOUSES.—Erection of eight houses of two types, for the U.D.C. Mr. A. G. Wheeler, architect, Eastwood. Deposit, £1 1s.

NOVEMBER 1.—**Markinch.**—HOUSES.—Erection of 24 houses, for the T.C. Mr. A. D. Haxton, architect, Leven. Deposit £1 1s.

NOVEMBER 1.—**Middleton in Wharfedale.**—BUILDINGS.—Erection of additional buildings at the Sanatorium at Middleton in Wharfedale for the Commissioners of H.M.O.W.

NOVEMBER 1.—**Prestatyn.**—HOUSES.—Erection of 32 houses for the U.D.C. Mr. F. Wilkinson, Architect, Council Offices, Prestatyn. Deposit £3 3s.

NOVEMBER 1.—**Slough.**—HOUSES.—Erection of houses of various types for the U.D.C. Mr. Alan Bromly, Architect to the Council, 4, William-street, Slough.

NOVEMBER 1.—**Tesse.**—HOUSES.—Erection of four houses at Bucknall, for the R.D.C. Messrs. Rogers & Shrimpton, architects, Knighton, Radnor. Deposit, £1 1s.

NOVEMBER 1.—**Wakefield.**—HOUSES.—Erection of 76 houses of different types, for the T.C. Housing Architect, Town Hall, Wakefield.

NOVEMBER 1.—**Woodford.**—SCHOOL.—Conversion of an Army Hut, already erected, into a boys' school, for the Essex C.C. County Architect, 79, Duke-street, Chelmsford. Deposit £2 2s.

NOVEMBER 2.—**Brentford.**—ROOF.—Extension of the roof over Brentford Dock, Brentford, for the G.W.R. Co. Engineer's Office, Paddington Station, London.

NOVEMBER 2.—**Carnforth.**—HOUSES, &c.—Erection of houses in brick (including draining and fencing), for the U.D.C. Mr. N. D. Preston, surveyor, 48, Market-street, Carnforth. Deposit, £1 1s.

NOVEMBER 2.—**Dartford.**—DECORATIONS, &c.—Decoration and renovation of Infectious Disease Hospital, Bow Arrow-lane, Dartford, for the Dartford Joint Hospital Committee. Mr. Eustace J. Hobbs, Clerk, Council Offices, West-hill, Dartford.

NOVEMBER 2. **Liverpool.**—ADDITIONS.—Alterations and additions to the existing Women's Hospital at the Smithdown-road Institution, Liverpool, for the Board of Guardians. Mr. Wm. P. Horsburgh, Licentiate R.I.B.A., Central-buildings, 41, North John-street, Liverpool. Deposit £3 3s.

* NOVEMBER 2.—**Salisbury.**—PAINTING.—For painting railings, &c., at Cemetery, for the Burial Board.—Mr. W. J. Goodwin, engineer, Salisbury.

NOVEMBER 2.—**Sheffield.**—SUB-STATION.—Erection of a transformer sub-station on a site in Charles-street and Cross Burgess-street, for the T.C. Mr. S. E. Fedden, General Manager, Commercial-street, Sheffield. Deposit, £1 1s.

NOVEMBER 3.—**Blaydon.**—HOUSES.—Erection of 87 houses at Highfield, Rowland's Gill, for the U.D.C. Surveyor, Council Offices, Blaydon. Deposit, £1 1s.

NOVEMBER 3.—**Gildersome.**—HOUSES.—Erection of four houses (in two blocks), for the U.D.C. Mr. T. A. Buttery, architect, Queen-street, Morley.

NOVEMBER 3.—**Glamorgan.**—VARIOUS WORKS.—(1) New school at Pontlliw, near Pontardulais; (2) new Infants' Department at Kingsbridge, near Gowerton; (3) Additional classrooms at Pontypridd Girls' County School; (4) Provision of air duct in mining and engineering laboratory at Aberdare Boys' County School; (5) Remodelling of existing Boys' and Girls' Departments at Tondu Council School; (6) Provision of temporary offices at Caerphilly "Goodrich Hotel" temporary school; (7) Provision of temporary offices at Beddau (near Llantrisant) temporary school; (8) painting at various schools. Mr. T. Mansel Franklen, Glamorgan County Hall, Cardiff.

NOVEMBER 3.—**Ilkley.**—EXTENSIONS.—Extensions to Electricity Generating Station, for the U.D.C. Surveyor, Town Hall, Ilkley.

NOVEMBER 3.—**Paddington.**—BUILDING WORKS.—Building works, comprising (a) the reconstruction of an existing building into a Nurses' Home: (b) the erection of an Operating Theatre and central corridor; (c) the making of a new roadway, at the Infirmary, for the Board of Guardians. Mr. P. Biddulph Hancock, Clerk, 313–319, Harrow-road, Paddington, W.9. Deposit £5.

NOVEMBER 3.—**Perthshire.**—HOUSES.—Erection of five roadmen's houses at Allean, Duntanlich, Dalcist, Kinloch Rannoch, and Dunan, for the Perthshire C.C. Mr. W. Erskine Thomson, architect, 36, George-street, Perth.

NOVEMBER 3.—**Stainland.**—HOUSES.—Erection of 36 houses and making of new street, for the U.D.C. Messrs. J. Berry & Sons, architects, 3, Market-place, Huddersfield.

NOVEMBER 4.—**Glaslyn.**—HOUSES.—Erection of six houses at Penmorfa, for the R.D.C. Messrs. Owen Morris Roberts & Son, architects, Bank-place, Portmadoc. Deposit, £2 2s.

NOVEMBER 5.—**Romney Marsh.**—HOUSES.—Erection of 14 houses in various districts for the R.D.C. Edwin A. Jackson, Architect, Ashford, Kent.

NOVEMBER 6.—**Clitheroe.**—HOUSES.—Erection of houses on Kenthorn-road site, for the T.C. Mr. A. R. Bleazard, Borough Engineer, Clitheroe. Deposit, £1 1s.

NOVEMBER 6.—**Inverness.**—PAVILION.—Erecting a phthisis pavilion at the Infectious Hospital, for the T.C. Mr. Alex. F. Mackenzie, Burgh Surveyor, Town House, Inverness.

NOVEMBER 6.—**Queensbury.**—PAINTING.—Painting, colour-washing, &c., to be done during the forthcoming Christmas Holidays, at Clayton and Shelf Council Schools. Mr. B. Leah, Education Office, Bingley.

NOVEMBER 6.—**Steyning.**—HOUSES. Erection of houses at Lancing, Steyning (Coxham-lane), Upper Beeding (High-street), Sompting (Cokeham), Sompting (Lambley's-lane), Ashurst (School-lane), Edburton (Truleigh Farm), Old Shoreham (Old Erringham Farm), Shermanbury (Fryland-lane), and Woodmancote (Blackstone). Mr. F. A. Crouch, Architect, Council Offices, Ham-road, Shoreham-by-Sea. Deposit £1 1s.

NOVEMBER 6.—**Westhampnett.**—HOUSES.—Erection of the six houses at North Mundham. Mr. John Dovaston, architect, Pallant House, Chichester. Deposit, £1 1s.

NOVEMBER 8.—**Amesbury.**—HOUSES.—Erection of 40 houses in the following parishes, viz., Newton Tony (4), Figheldean (4), Little Boscombe (4), Winterbourne Stoke (4), Winterbourne Gunner (4), Amesbury (20), for the R.D.C. Mr. A. M. Wilson, Clerk, 12, Bridge-street, Salisbury. Deposit, £2 2s.

NOVEMBER 8.—**Budleigh Salterton.**—HOUSES.—Seven pairs of parlour-type houses at Budleigh Salterton, South Devon, for the Council. Mr. F. G. Hill, Clerk to the Council, Budleigh Salterton.

NOVEMBER 8.—**Edinburgh.**—RECONSTRUCTION.—Reconstruction of tenement, 23, South St. James-street, for the T.C. Director of Housing, 1, Parliament-square, Edinburgh.

NOVEMBER 8.—**Ilkley.**—ADAPTATION.—Erection and adaptation of Army hut at Ilkley Grammar School, for the West Riding E.C. Education Architect, County Hall, Wakefield.

NOVEMBER 8.—**Leeds.**—ALTERATIONS.—Alterations to the Inland Revenue Office, Commercial Buildings, 36, Park-row, Leeds, for H.M. Commissioners of Works. Director of Contracts, H.M. Office of Works, London, Deposit £1 1s.

NOVEMBER 8.—**Leicester.**—ADDITIONS.—Erection of additional buildings at the Borough Sanatorium, Leicester, for H.M. Commissioners of Works. Director of Contracts, H.M. Office of Works, Storey's-gate, Westminster, S.W. Deposit £1 1s.

NOVEMBER 8.—**Mansfield.**—ADDITIONS.—Erection of additional buildings at Ransome Sanatorium, Ratcher-hill, near Mansfield, for H.M. Commissioners of Works. Director of Contracts, H.M. Office of Works, Storey's-gate, Westminster. Deposit £1 1s.

NOVEMBER 8.—**Newton-Mearns.**—HOUSES.—Erection of eight blocks of cottages at Newton-Mearns, for the Renfrew C.C. Mr. Jas. A. M'Callum, District Clerk, 15, West George-street, Glasgow. Deposit, £1 1s.

NOVEMBER 8.—**Royston.**—HOUSES, &c.—Erection of 30 houses and the necessary road and sewer works, for the U.D.C. Mr. H. F. J. Banham, Clerk, Council Offices, Royston, Herts. Deposit £2 2s.

NOVEMBER 8.—**Sandwich.**—HOUSES.—Erection of 99 houses at Sandwich, Kent, for the T.C. Architect, Mr. E. W. May, 51, New-street, Sandwich. Deposit, £3 3s.

NOVEMBER 8.—**Shipley.**—HOUSES.—Erection of 53 houses of seven types, at Craig End, Windhill, for the U.D.C. Architect, Council Offices, Somerset House, Shipley. Deposit £1.

NOVEMBER 10.—**London.**—TILING AND SLATING. Supply and laying of tiles and slates in connection with certain housing schemes, for H.M. Office of Works. Director of Contracts, H.M. Office of Works. Storey's-gate, S.W.

NOVEMBER 12.—**Saffron Walden.**—HOUSES.—Erection of 33 B. type houses at the Debden-road site, Saffron Walden, for the Corporation. Mr. A. N. Forbes, Borough Surveyor, Hill-street, Saffron Walden. Deposit £1 1s.

NOVEMBER 12.—**Stratford-on-Avon.**—HOUSES.—Erection of 54 houses for the Rural Council working class dwellings. Mr. M. J. Harvey, 5, Shakespeare Chambers, Stratford-upon-Avon. Deposit £1 1s.

NOVEMBER 13.—**Chesham.**—HOUSES.—Erection of 89 houses on the Brockhurst-road site, for the U.D.C. Mr. C. Philips Cole, architect, Berkhamstead, Herts. Deposit £2 2s.

NOVEMBER 13.—**Ghent.**—WAREHOUSES.—Construction of two reinforced concrete warehouses for the Municipal Authority. Engineering Office. Department of Overseas Trade, 35, Old Queen-street, S.W.

NOVEMBER 13.—**North Berwick.**—HOUSES.—Erection of two blocks of four houses each at Hast-road, for the T.C. Mr. J. C. Miller, Burgh Surveyor, Berwick.

NOVEMBER 15.—**Benenden, Kent.**—BUILDINGS.—Erection and additional buildings at the Sanatorium at Benenden, near Cranbrook, Kent. The Secretary, H.M. Office of Works, Storey's-gate, Westminster, S.W.1. Deposit £1 1s.

NOVEMBER 15.—**Pittenweem.**—HOUSES.—Erection of 14 houses at Abbey Park, for the T.C. Mr. W. Walker, architect, 81, North-street, St. Andrews. Deposit, £1 1s.

NOVEMBER 20.—**Todmorden.**—HOUSES.—Erection of 88 houses at Royd, for the T.C. Mr. J. A. Heap, Borough Engineer, Municipal Offices, Rise-lane, Todmorden.

NOVEMBER 26.—**Goring Reading.**—COTTAGES.—Erection of 5 pairs of cottages in Goring and Whitchurch. Mr. G. F. Turner, 7, Broad-street, Bloomsbury, London, W.C. Deposit £1 1s.

DECEMBER 1.—**Tendring.**—HOUSES.—Erection of 10 houses at Thorpe, for the R.D.C. Messrs. Tomkins, Homer & Ley, architects, Frinton-on-Sea. Deposit, £1 1s.

NO DATE.—**Thirsk.**—HOUSES.—Erection of eight new houses at South Otterington, for the R.D.C. Mr. William Swarbeck, Clerk, Council Offices, Finkle-street, Thirsk.

## FURNITURE, MATERIALS, etc.

OCTOBER 30.—**Manchester.**—MATERIALS.—Supply to the Public Health Committee of 10 tons genuine English white lead in oil; 150 galls. pure raw linseed oil; 100 galls. pure boiled linseed oil; 150 galls. pure American turpentine. Housing Manager, Civic Buildings, 1, Mount-street, Manchester.

NOVEMBER 2.—**India.**—PORTLAND CEMENT.—The High Commissioner for India is prepared to receive tenders from such persons as may be willing to supply Portland cement. Director General of Stores, India Office, Whitehall, S.W.1.

NOVEMBER 4.—**Limehurst.**—GRANITE.—Supply of ¼ in. limestone or granite chippings and 1¼ to 2 in. broken granite, for the R.D.C. H. H. Turner, Surveyor, Council Office, Waterloo, near Ashton-under-Lyne.

NOVEMBER 9.—**London.**—SHELVING.—Supply of cases of pigeon-holes and open shelving, for H.M. Commissioners of Works. Controller of Supplies, H.M. Office of Works, &c., King Charles-street, Westminster, S.W. 1.

NOVEMBER 10.—**London.**—Tiles and slates in connection with certain housing schemes. Secretary, H.M. Office of Works, Storey's-gate, Westminster, London, S.W.1.

NOVEMBER 20.—**Farnham.**—TAR.—Supply of approximately 25,000 gallons dehydrated tar, to the U.D.C. Mr. J. W. Wright, Clerk, Council Offices, Farnham.

NOVEMBER 24.—**West Hartlepool.**—MATERIALS.—Supply to the T.C. of road materials and sewer pipes. Mr. Nelson F. Dennis, Borough Engineer, Municipal Buildings, West Hartlepool.

## ENGINEERING, IRON AND STEEL.

OCTOBER 30.—**Chesham.**—BRIDGE.—For widening of Army Mill Bridge, for the Bucks C.C. Mr. R. J. Thomas, County Surveyor, County Hall, Aylesbury.

NOVEMBER 1.—**Bromley.**—RESERVOIR.—Construction of covered service reservoir at Bromley, Kent, for the Metropolitan Water Board. Offices of the Board (Chief Engineer's Department), 173, Rosebery-avenue, Clerkenwell, E.C. Deposit £10.

NOVEMBER 1.—**Middleton-in-Wharfedale.**—ELECTRIC INSTALLATION.—Installation of electric lighting, electric bells and telephone, at the Middleton-in-Wharfedale Sanatorium, near Ilkley, for the West Riding C.C. West Riding Architect, County Hall, Wakefield.

NOVEMBER 2.—**Hammersmith.**—Revision of heating apparatus in the Receiving House for Children, and Relief Offices, 206, Goldhawk-road, Shepherds Bush, W.12. Mr. S. M. Jones, Clerk to the Guardians, 206, Goldhawk-road, Shepherd's Bush, W.12.

NOVEMBER 2.—**London.**—BRIDGEWORK.—Supply of about 35 tons of bridgework, comprising 60 spans of 6 ft. in the clear, for the Jamnagar-Dwarka Railway Co. Messrs. Rendel, Palmer & Tritton, 12-14, Dartmouth-street, Westminster, S.W. Charge 10s. 6d.

NOVEMBER 2.—**Paddington.**—GIRDERS.—Supply of about 93 tons of steel girders and other iron and steel work of British manufacture, for the G.W.R. Co. Office of the Engineer, Paddington Station, W.

NOVEMBER 3.—**Belfast.**—WATERWORKS.—Construction of the "Silent Valley" storage reservoir, &c., in the Mourne Mountains, County Down, for the T.C. Mr. W. I. Quinn, Secretary, Water Office, Royal-avenue, Belfast. Deposit £5 5s.

NOVEMBER 3.—**London.**—RAILWAY MATERIAL.—Supply to the South Indian Railway Co. of:—(1) steel boiler plates (flat and flanged); (2) screw spikes; (3) steel bearing plates; (4) wheels and axles (disc) (250 pairs). Company's offices, 91, York-street, Westminster, S.W.1. Charge 10s. for 1, 2, 3, and £1 for 4.

NOVEMBER 5.—**Aberdeen.**—RESERVOIR.—Construction of reservoir, &c., at Invercannie, for the T.C. Water Engineer, 41½, Union-street, Aberdeen. Deposit £5.

NOVEMBER 10.—**Sheffield.**—ELECTRIC LIGHTING.—Electric lighting at the hospital and infirmary blocks at the institution of the Board of Guardians. Mr. J. E. Moulding, Union Offices, "The Edge," Sheffield.

NOVEMBER 13.—**St. Austell.**—RESERVOIR.—Construction of a reservoir at Polharmon, laying water mains, &c., for the R.D.C. Messrs. Andrew & Randell, engineers, New Inn Chambers, St. Austell.

NOVEMBER 16.—**Wallasey.**—STEEL ROOF.—Steel work of a roof, for boiler house: span, 44 ft., length, 44 ft.; five trusses with angle-iron purlins, gutters, down pipes, &c. Mr. J. H. Crowther, gasworks, Limekiln-lane, Wallasey.

NOVEMBER 16.—**Wallasey.**—VARIOUS WORKS AND SUPPLIES.—The Corporation Gas and Water Department invite tenders for a Lancashire boiler, railway metals, creosoted sleepers, and for the construction of two branch railway sidings. Mr. J. H. Crowther, Engineer, Gas Works, Wallasey.

NOVEMBER 30.—**Bristol.**—DOCK.—**The Bristol Docks Committee invite tenders for the lease of its dry dock on the floating harbour, near Cumberland-road, subject to the conditions that the lessee shall undertake the restoration and improvement of the dock (including the provision of a new caisson). Chief Engineer Avonmouth Docks, Bristol.**

DECEMBER 9.—**British Columbia.**—DOCK.—Construction of dry dock at Esquimault, for the Department of Public Works, Ottawa. Enquiry Office, Department of Overseas Trade, 35, Old Queen-street, S.W.

## ROAD, SANITARY, AND WATER WORKS.

OCTOBER 30.—**Bristol.**—ROAD.—Construction of earthworks, temporary bridges and surface water drainage in connection with new road from Bristol to Avonmouth, for the T.C. Engineer's Office, 63, Queen-square, Bristol. Deposit £5 5s.

OCTOBER 30.—**Middleton.**—For making up site in connection with Boarshaw Housing Scheme, for the T.C. Borough Engineer, Town Hall, Middleton. Deposit £1 1s.

NOVEMBER 1.—**Glyncorrwg.**—ROAD.—Construction of an approach road to the Tynypant site for housing, for the U.D.C. Mr. W. P. Jones, Surveyor, Council Offices, Cymmer, Port Talbot.

NOVEMBER 1.—**Stoke-on-Trent.**—SANITARY.—Conversion of 90 cesspools into water closets, at Longton, for the T.C. Health Department, Stoke-on-Trent.

NOVEMBER 2.—**Llandaff.**—ROADS.—For private street improvement works and surface water sewers, for the R.D.C. Mr. William Farrow, surveyor, Park House, 20, Park-place, Cardiff.

NOVEMBER 2.—**Pontardawe.** WATER MAINS.—For laying water mains at Pontardawe and Clydach, for the R.D.C. Mr. B. Islwyn Phillips, Engineer, Pontardawe.

NOVEMBER 2.—**Wembley.**—ROADS.—Making-up of Waverley and Chatsworth-avenues, for the U.D.C. Mr. Cecil R. W. Chapman, Surveyor, Council Offices, Wembley.

NOVEMBER 3.—**Ryton.**—SEWERAGE.—Construction of sewerage works in connection with housing schemes at Ryton (Reasby Feild), Crawcrook and Greenside, for the U.D.C. Messrs. Newcombe & Newcombe, architects, 23, Eldon-square, Newcastle.

NOVEMBER 15.—**Gellygaer.**—ROADS.—Construction of second section of the road between Hengoed and Tir-y-berth, about one mile in length, for the U.D.C. Mr. F. Read, Engineer, Council Offices, Hengoed, Glam. Deposit £2 2s.

NOVEMBER 16.—**Easington.**—ROADS.—For private street works at Shotton Colliery, Wingate-lane, and Horden. Mr. J. G. Heslop, Highway Surveyor, Castle Eden. Deposit £2.

NOVEMBER 20.—**Wath-upon-Dearne.**—ROADS, &C.—Construction of roads, sewers, fencing, &c., in connection with housing scheme at Wath, for the U.D.C. Messrs. Nicholson & Co., Clerks, Wath-upon-Dearne. Deposit £2 2s.

NOVEMBER 22.—**Dewsbury.**—SEWAGE DISPOSAL WORKS.—Construction of precipitation tanks, the culverting of Pildacre Beck, and other work in connection with the construction of sewage disposal works at Mitchell Laithes, for the Dewsbury T.C. Messrs. J. Diggle & Son, 14, Brown-street, Manchester. Deposit £3 3s.

FEBRUARY 14, 1921.—**Palestine, &c.**—CEMETERY CONSTRUCTION.—The Imperial War Graves Commission invite tenders for the construction of (*a*) four cemeteries in Palestine, (*b*) 26 cemeteries at Anzac (Gallipoli), (*c*) 14 cemeteries in Macedonia. Director of Works, Imperial War Graves Commission, 33–36, Baker-street, W. Deposit £10.

NO DATE.—**Needham Market.**—WELL.—Sinking of a well on Barking Tye, near Needham Market, for the R.D.C. of Bosmere and Claydon. Mr. H. Smith, Inspector's Office, High-street, Needham Market.

## Auction Sales, Tenders, &c.

OCTOBER 26 AND 29.—**Purfleet.**—The sale of army furniture and effects on above date has been unavoidably postponed.

NOVEMBER 1.—**Hackney.**—VENETIAN BLINDS.—Large quantity for disposal by the Guardians of the Union. Clerk to the Guardians, 2, Sidney-road, Homerton, E.9.

NOVEMBER 2.—**Finchley, N.**—Messrs. Protheroe & Morris are instructed by Messrs. P. E. Kay, Ltd. (who have decided to offer the Claigmar Vineyards, Finchley, N., for sale by auction on the premises. Auctioneers, 67 and 48, Cheapside, London, E.C.

NOVEMBER 3.—**Brighton.**—Messrs. Harris & Gillow will sell, by order of the Disposal Board, camp buildings at the Pavilion Hospital, Brighton. Auctioneers: Auction Yards, Shoreham-by-Sea, Sussex.

NOVEMBER 3.—**Greenford (Middlesex).**—Messrs. Bradshaw, Brown & Co. will sell, by order of the Disposal Board, at C.S. Depot, 93, Greenford, plant and machinery, office and other furniture, also large quantity of engineers' and general stores, paint, varnish, &c. Auctioneers: Billiter-square Buildings, London, E.C. 3.

NOVEMBER 10.—**Cheapside, E.C.**—Messrs. Toplis & Harding will sell at their sale rooms, 194 dozen British-made pickheads, 6,925 dozen British-made shovels. Auctioneers, 28, Old Jewry, E.C.2.

NOVEMBER 16 AND 17.—**Marshmoor Hill, Herts.**—Messrs. Joseph Hibbard & Sons will sell upon the site of the late Board of Trades' Mill at Marshmoor, stock of well-seasoned English timber.

## Competitions.

(*See Competition News, page* 480.)

## Public Appointments.

OCTOBER 29.—**South Africa.**—QUANTITY SURVEYORS.—**Fully-qualified Quantity Surveyors and Quantity Surveyor's Assistants** required by the Government of the Union of South Africa, Department of Public Works.

NOVEMBER 1.—**Sedgley.**—Clerk of Works required by the U.D.C. Mr. Thomas K. Knight, Council House, Sedgley.

NOVEMBER 1.—**Wolverhampton.**—Qualified Senior Architectural Assistant required by the Housing Committee. Mr. George Green, Borough Engineer, Town Hall, Wolverhampton.

NOVEMBER 3.—**Holywell.**—Clerk of Works required by the Rural District Council. Mr. Richard Jones, Clerk to the Council, Council Offices, Holywell.

NOVEMBER 5.—**Sunderland.**—Clerk of Works in connection with the County Housing Department. Clerk of Works, Mr. H. Craven, Town Clerk, Town Hall, Sunderland.

NOVEMBER 5.—**Banbury.**—Clerk required to check on behalf of various local authorities concerned, the accounts of a firm of contractors who are carrying out housing schemes in the neighbourhood. Mr. E. Lamley Fisher, Union Offices, Banbury, Oxon.

NOVEMBER 8.—**Battersea.**—DRAUGHTSMAN.—The temporary services of a junior draughtsman are required by the Borough Council. Borough Surveyor, Town Hall, Battersea.

NOVEMBER 8.—**Durham.**—County Valuer required by the County Council. Mr. Harold Jevons, Clerk to the County Council, Shire Hall, Durham.

NOVEMBER 8.—**East Grinstead.**—Clerk of Works required by the Urban District Council, Mr. E. P. Whitby Hughes, Clerk to the Council, London-road, East Grinstead.

NOVEMBER 9.—**Manchester.**—Housing Director required by the City Council. Mr. Thomas Hudson, Town Clerk, Town Hall, Manchester.

NOVEMBER 10.—**Durham.**—The County Council of Durham invite applications for various positions in the Architectural Department, Director of Education, Shire Hall, Durham.

NOVEMBER 11.—**East Sussex.**—Architectural Assistant required by the Small Holdings and Allotments Committee of the County Council. Clerk to the County Council, County Hall, Lewes.

NOVEMBER 12.—**Glamorgan.**—Junior assistants required in Architect's Department of County Council Education Committee. Mr. W. James Nash, F.R.I.B.A., Metropolitan Chambers, Neath.

NOVEMBER 30.—**Thetford.**—Clerk of Works required by the Borough for housing scheme. Mr. John Houchen, Town Clerk, London-road, Thetford, Norfolk.

NO DATE.—**Leeward Islands.**—Assistant Superintendent of Works required by the Government of the Leeward Islands, British West Indies, for service in the Island of Nevis. Crown Agents for the Colonies, 4, Millbank, London, S.W.1.

NO DATE.—**Seychelles.**—Superintendent of public works and surveys required by the Government of Seychelles. Crown Agents for the Colonies, 4, Millbank London, S.W.1.

NO DATE.—**Tottenham.**—Instructor in building science required by the Middlesex Education Committee for Tottenham Polytechnic Evening Classes. Mr. H. P. Shallard, M.A., The Polytechnic, High-road, Tottenham, N.15.

## LABOUR FOR HOUSING.

THE Government proposals for the employment of ex-Service men on housing schemes were considered at a conference of the National Federation of Building Trades' Operatives at Manchester on Tuesday last. In a statement submitted to the conference, Dr. Addison said that the Government proposed to select certain housing schemes which were being held up owing to the shortage of labour and have the work carried out by ex-Service men at present unemployed. These men would be trained in the various trades as the work proceeded, and would be paid at rates based on the district rates, rising to the full district rates as they became proficient. Apart from instructors and foremen, such schemes would be carried out solely by ex-Service men. The Government considered that 50,000 men should be taken on for training in the various skilled trades in the industry. The proceedings at the conference were private, but we understand that a resolution was passed to the effect that "the proposal amounted to wholesale dilution and the suspension of the working rules which had taken years of effort, pain and destitution to build up; if such proposals were accepted they would necessarily be accompanied by intensified insecurity to an industry which had been in the past the chief among casual trades, and the conference requested the Government to send an immediate reply stating what guarantees were offered in return for the suspension of the relative guarantees the trade unions afforded."

During the discussion of the unemployment problem in the House of Commons on Thursday last week, Dr. Macnamara (Minister of Labour) made a strong appeal for the admission of more men, particularly ex-Service men, into the building trades. There were, he said, 65,000 fewer skilled men in the building trades now than in 1914, and at the same time there was a shortage of half-a-million houses. With all the arrears and shortage of the past six years to be made good, no one could suggest that there was any possibility of over-production in that particular industry, and it was up to the operatives not to let the present opportunity pass to help the unemployed ex-Service men. What risks could the building trade operatives take compared with the risks the soldiers and sailors took? Mr. G. Edwards (Lab.) said the Government was responsible for the delay in erecting houses owing to its refusal to guarantee that there should be no unemployment in the building trades. Dr. Addison (Minister of Health) said the building industry presented the phenomenon of having less labour than the work demanded. If labour and materials were available the number of houses at present in course of erection (60,000) could be doubled. There was a deficiency of about 16,000 skilled men, and as every two skilled men engaged made employment for three unskilled men, the industry could absorb at least 35,000 additional men in the erection of houses alone. From start to finish he had never had any help in the matter from the Labour Members of the House of Commons. Their most effective and useful contribution would be by aiding him to devise fair and efficient means of providing work for unemployed ex-Service men.

The Ministry of Health states that the figures of employment on housing work up to October 1 show only a slight improvement in the percentage of skilled workers employed. This has now risen to 63 per cent. of those required on schemes actually in progress and takes no account of schemes in the earliest stages of development, which, as they progress, will make still further demands on the available supply of skilled tradesmen. The number actually employed on housing work at the end of September was 27,024, the number required being 43,113. The deficiency of 16,089 was made up as follows:—8,173 bricklayers, 3,915 carpenters, 845 slaters, 1,424 plasterers, 567 plumbers, 625 painters and glaziers. There was also a recorded shortage of 987 unskilled labourers.

## PROPOSED NEW BUILDINGS AND OTHER WORKS.*

**In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.**

BATH.—Plans approved: Garage, 1, Sydney-place; alterations, Green Tree Tavern, Lower Bristol-road; alterations, Berkeley Arms, Berkeley-street; alterations, Beaufort Arms, Princes-street; porch and bay window, Fair View, Combe Down; Beau Nash Picture House, Westgate-street; alterations, 37, Park-street; alterations, 20, Westgate-street.

BIRKENHEAD.—The B.E.C. propose to proceed at an early date with the erection of the new Council school in Pilgrim-street.

BOLTON.—Plans passed: Bleacher's Association, Ltd., for bridge at the Oaks; Mr. A. Openshaw, scullery, 479 Bury-road; Mr. J. Chadwick, garage extension, Greenmount-lane; Bolton Corporation Markets Committee, for stalls, Wholesale Market; W. C. Knowles, for alterations to premises, 32A, Kay-street; Magee, Marshall & Co., for addition to grill-room, Pack Horse Hotel; Bolton Corporation Gas Committee, for retort house, Gas-street.

BRIGHTON.—The Education Committee is recommending the T.C. to provide a new school at a cost of £37,400.

BRIDLINGTON.—Plans passed: Mr. M. B. Parkin (1) porch at 63, St. John's-avenue East, for Mr. J. Harness; house, Cardigan-road, for Mr. J. Vivian; alterations and additions, 15, Prospect-street, for Mr. A. J. Sigsworth; stable buildings, &c., Beck-hill, for Mrs. Nicholson; porch and bay window to "Mayfield Lodge," Mayfield-road, for Mrs. F. Piercy; Mr. S. Dyer, farm building, Westgate, for Mr. R. Danby; Messrs. Blackmore & Sykes, extensions to the Coventry Garage, Prospect-street, for Messrs. Trown & Tooth; Messrs. Walker, Son & Field, Lamplugh-road, for the Venerable Archdeacon Lambert; Mr. J. R. Earnshaw, alterations to shop premises in the Marine-drive for Mr. J. H. Willows; alterations and additions to premises, "Regent House," in Promenade, for Messrs. R. Allen & Co.; alterations and additions, 12, Vernon-road, for Mrs. Robinson; alterations to the sanitary accommodation at the Y.M.C.A. premises, Princess-street; and alterations to the shop entrance at 19 and 21, Promenade, for Mr. F. E. Gray; Mr. C. F. Johnson, alterations, 16, Quay-road, for Messrs. R. Bailey & Sons.

HACKNEY.—Extension to factory, at premises of Lewis Berger & Sons, Morning-lane, for L. H. & R. Roberts; sanitary works, 22, Mare-street, for Baker, Hammond & Laver; shop premises, Mare-street, for F. W. Woolworth & Co.; workshop, Globe Works, for H. Holmes & Co.

KENDAL.—Plans passed: Motor garage, Stricklandgate, Messrs. Shaw & Stables, architects, Craghill & Co.; re-erection of studio, New-road, for Mr. F. Platt; cottage, Dalton House, Castle-street, Mr. J. Hutton, architect, for Mr. F. Knight; bungalow, Saw Mill-lane, for Mr. H. G. Hunter; alterations, Fleece Inn, Highgate, Messrs. Shaw & Stables, for the Westmorland Catering Co.

KIRKINTILLOCH.—Plans for the housing scheme have been passed at the Dean of Guild Court. They provide for 200 houses, half of them of three apartments and the other half of four apartments. They are to be erected at Back of Loch, at an estimated cost of £233,572.

MANCHESTER.—The Housing Committee has decided to recommend the Corporation to buy the Wythen shawe Estate of 4,500 acres for housing purposes.

MELTHAM.—The U.D.C. has approved of plans for a motor garage at Bank Cottage, for Mr. F. Haigh.

NOTTINGHAM.—The proposal to establish a sanatorium on the Bulwell Hall estate for the treatment of tuberculosis, involving an estimated expenditure of £100,000, has been passed by the T.C.

SHEFFIELD.—Plans passed: Four houses, Sandford Grove-road, for Central Pictures Co.; house, Sefton-road, for Mr. H. G. Dale; house, School Green-lane, for Mr. A. T. Smith; two houses, Ecclesall-road, for Mr. A. Davy; house, Fulwood-road, for Mr. J. D. Foxon; house, Woodland-road, for Mr. H. King; house, Beulah-road, for Mr. E. S. Nutt.

SOUTH SHIELDS.—Plans passed: Mr. J. H. Morton, for Mr. A. Ransome, warehouse, Barnes-road; T. A. Page & Son, for Mr. M. Metcalfe, house, Beach-road; Mr. Wm. Storey, for Jas. Joicey & Co., Ltd., bath rooms and sculleries, 57 & 59, Hudson-street; Mr. Howard Hill, for Mr. M. Levy, alterations to premises, corner of Waterloo-vale and Chapter-row; Mr. Howard Hill, for Mr. A. J. Singer, alterations to premises, 18, Keppell-street and Smithy-street; Mr. J. H. Morton, for Alderman R. Readhead, alterations to villa adjoining "Southgarth," Westoe Village; T. A. Page & Son, for Mr. R. Finn, two houses in flats, Sandwich-road.

SOUTHEND-ON-SEA.—Plans approved: House and shop, London-road, for Mr. W. Swires; new bath-room and w.c., 6, Devereux-terrace, for Mrs. M. Joicey; room in roof, 72, Wimborne-road, for Mr. W. Mumford; conservatory, "Bronleigh," Kingsway, for Mr. F. Broughton; bay window and conservatory, "Kelvedon," Lonsdale-road, for Mr. H. R. Gardiner; lift, &c., Westcliff Hotel, Westcliff-parade, for Mr. W. J. Hockley; shops and restaurant, Queen's-road, for Mr. J. Sayers; bakery, Sutton-road, for Stratford Co-operative Society, Ltd.; four houses, Chalkwell Park-drive for the Leigh Housing Society, Ltd.; two houses, Fairmead-avenue, for the Leigh Housing Society, Ltd.; four houses, Kingswood-chase, for the Leigh Housing Society, Ltd.; four houses, Dundonald-drive, for the Leigh Housing Society, Ltd.; four houses, Thorpe Hall-avenue, for the Leigh Housing Society, Ltd.; alterations, Southchurch-road, for the Stratford Co-operative Society, Ltd.; drainage, "Lynbrook," Southbourne-grove, for Mr. A. Bolton; alterations, 12, Palmeira-avenue, for Mr. J. Stone; garage, Maldon-road, for Mr. H. Truss; conservatory, "Illawarra," Fairmead-avenue, for Mr. H. Harrowing; house and garage, Parkanaur-avenue, for Mr. J. Cook; garage, rear of 237, London-road, for Messrs. J. Costin & Sons; alterations and additions, Nelson-mews, for Mr. J. Vineall; garage, Edith-road, for Mr. E. E. Everitt; garage, side of "Copelands," Imperial-avenue, for Mr. F. W. Brown; garage, 56, Park-road, for Mr. L. Harris; garage, 107, Pall Mall, for Mr. W. F. White.

STOCKTON-ON-TEES.—Plans passed by R.D.C.: Two houses, Beechwood-road, Preston, for Mr. J. Muir.

STOKESLEY.—Plans passed by R.D.C.: Cottage, Far End Farm, Kirklevington, for Col. Spence; alteration of a warehouse into a cottage, Stokesley, for Mr. P. English; army hut, Picton, for Mr. J. A. Dodsworth.

SWANSEA.—Plans passed: lavatory accommodation, 264, Oxford-street, for J. H. Jenkins & Co.; additions, 14, Argo-terrace, Pwll-street, for T. James; additions, Glanmor-crescent, for R. Hodgens; additions, Neath-road, Peniel-green, for W. Nichols; additions, Fountain Inn, Carmarthen-road, for Wm. James; alterations, Caswell-road, for W. Thomas; stores, Carmarthen-road, Fforestfach, for D. T. Evans; additions, Gower-road, Sketty, for W. H. Crouch; alterations and additions, 14, Park-street, for A. E. Rochester; house, Higher-lane, Langland, for W. J. Roberts; two houses, Eden-avenue, for John Pye & Co.; two houses, Knoll-avenue, for L. Davies; two houses, Eversley-road, for W. H. Harding & Co., Ltd.; shed, St. Helen's-avenue, for C. Fuller & Sons; additions, 12, Port Tennant-road, for T. Richards; house, Neath-road, Morriston, for J. Harris; stores, 9, Gwydr-terrace, Uplands, for Jones & Thomas; additions to shed, 1, Bond-street, for Mr. Persan.

### FIRES.

DARWEN.—A destructive fire has occurred in the polish factory of the Evergloss Co., Shoreybank.

GLASGOW.—Damage amounting to £15,000 has been caused by a fire which occurred at 70, Miller-street, Glasgow, occupied by Messrs. Kirkwood, Mackie & Tulloch, blouse specialists.

ROCHDALE.—Damage amounting to over £100,000 has been done by a fire which broke out at the Halt Fold Dyeing & Raising Co.'s works, Whiteworth.

SOUTHWARK.—Great damage has been done to the Hop Exchange by fire.

## TRADE NEWS.

Messrs. J. H. Sankey & Son, Ltd., have issued a new pamphlet describing their well-known chimney pots for the prevention of down-draught. The pots, which are made of clay, contain a series of louvres which rise towards the interior of the pot through which the wind passes, thus causing a vacuum in the chimney and drawing the smoke out at the top. It is also claimed that this type of pot is effective in preventing down-draught in the case of blasts of wind descending vertically, as the rush of wind escapes through the louvres and creates a similar vacuum as in the case of horizontal winds.

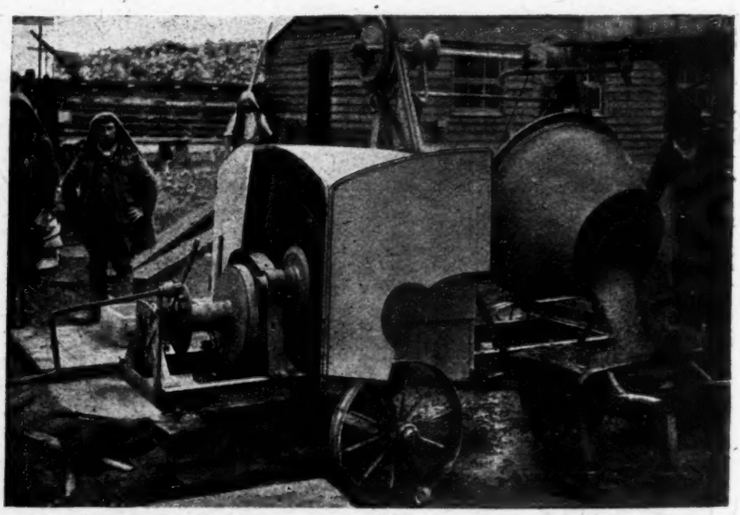
The Sturtevant Engineering Co., Ltd. (147, Queen Victoria-street, E.C.), have issued a leaflet giving the results of some efficiency tests carried out with various types of vacuum cleaners. The results were briefly stated as follows:—Carpet cleaning test: Sturtevant ½ h.p. turbine cleaner extracted 11 lbs. 2 ozs. of dust in 43 minutes, against 2 lbs. 14 ozs. with a pump machine; rug cleaning test: Sturtevant turbine machine extracted 9 lbs. 1 oz. of dust in 30 minutes, against 3 lbs. 10 ozs. with a pump machine; railway carriage cleaning test, each machine extracting 11½ ozs. of dust: Sturtevant ½-h.p. turbine occupied 8½ minutes, 1-h.p. pump 14 minutes.

One of the interesting exhibits at the recent Church Congress at Southend was that of Messrs. Gillett & Johnston, of Croydon, the well-known makers of church and tower clocks, bells and carillons. The chime of eight bells was played at intervals by means of a piano-clavier. The official time for the exhibition was given by a tower clock (specially erected for the purpose), having four 6 ft. dials and chiming the quarters and striking the hours on the chime of bells. A few fine specimens in oak and mahogany cases of grandfather and bracket clocks represented the latest branch of this firm's activities.

Sir Isaac Pitman & Sons, Ltd., publishers, are leaving their present publishing offices at 1, Amen Corner, and removing to Pitman House, at the junction of Parker-street with Newton-street, close to the British Museum and Holborn Stations, during the first week in November.

### Concrete Water Tower Construction.

WE illustrate on this page a small portable concrete mixer (a "Jaeger 4H machine) in use at the Eastman Dye Works, Acton, where Messrs. Higgs & Hill, Ltd., are erecting a 150,000-gallon ferro-concrete water tower, to the designs of Mr. B. L. Hirst, consulting engineer, of Crags Court House, Whitehall. The foundations for this structure go down some 20 feet below the surface, and the superstructure is roughly 50 ft. high, the tank being 45 ft. in diameter. Three men are required to load the machine, one man operates the loading and damping, and four or five men are employed in filling and ramming the concrete delivered by the machine. In an 8-hour day the machine has delivered up to 24 cubic yards of concrete, and the petrol engine requires roughly 1½ gallons of fuel per day.



**The "Jaeger" Concrete Mixer.**

* See also our List of Contracts, Competitions, &c.

# PRICES CURRENT OF MATERIALS.*

**[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue lead and oil prices have been revised.—Ed.]**

## BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge. £ s. d.
Best Stocks ..... 4 17 0

Per 1000, Delivered at London Goods Stations.

| | £ s. d. | | £ s. d. |
|---|---|---|---|
| Flettons ..... | 3 17 0 | Best Blue Pressed Staffordshire ... | 12 10 6 |
| Best Stourbridge Fire bricks ..... | 12 12 6 | Do. Bullnose .. | 12 15 6 |
| | | Blue Wire Cuts | 10 12 0 |
| GLAZED BRICKS— | | | |
| Best White, Ivory, and Salt Glazed Stretchers .. | 29 10 0 | D'ble Str'tch'rs | 38 0 0 |
| | | D'ble Headers | 35 0 0 |
| Headers..... | 29 0 0 | One Side and two Ends .. | 39 0 0 |
| Quoins, Bullnose and 4½in. Flats ..... | 36 0 0 | Two Sides and one End .... | 37 10 0 |
| | | Splays and Squints..... | 37 10 0 |

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £6 10s. extra over white.

| | s. d. | |
|---|---|---|
| Thames Ballast ..... | 19 6 | per yard, delivered |
| Fit Sand ..... | 25 0 | |
| Thames Sand ..... | 25 6 „ „ | 2 miles |
| Best Washed Sand ..... | 25 6 „ „ | radius |
| ½ in. Shingle for Ferro-Concrete ..... | 24 6 „ „ | Paddington. |
| ¼ in. „ „ | 25 6 „ „ | |

Per ton, delivered in London area.

| | £ s. d. | | £ s. d. |
|---|---|---|---|
| Best Portland Cement ..... | 4 7 6 | .. | 4 13 0 |

80/6 alongside at Vauxhall in 80-ton lots.

| | |
|---|---|
| Ferrocrete per ton extra on above. .. .. | 10 0 |
| Best Ground Blue Lias Lime | 2 19 6 at rly. depot. |

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime ..... 75s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 44s. 6d. per ton at rly. dpt.

## STONE.

| | s. d. |
|---|---|
| BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube..... | 3 2½ |
| Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube ..... | 3 10½ |
| Do. do. delivered on road waggons at Nine Elms Depot ..... | 3 11½ |
| PORTLAND STONE— | |
| Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube ..... | 4 11½ |
| Do. do. delivered on road waggons at above stations, per ft. cube.. ..... | 5 0½ |
| White basebed, 3d. per ft. cube extra. | |
| NOTE.—½d. ft. cube extra for every foot over 20 ft. average, and ½d. beyond 30 ft. | |
| YORK STONE, BLUE—*Robin Hood Quality.* | |
| Delivered at any Goods Station London. | s. d. |
| Scappled random blocks .....Per Ft. Cube | 17 4 |
| 6 in. sawn two sides landings to sizes (under 30 ft. super.) .....Per Ft. Super | 11 10½ |
| 6 in. rubbed two sides, ditto ..... „ | 13 3½ |
| 3 in. sawn two sides slabs (random sizes) „ | 5 3 |
| 2 in. to 2½ in. sawn one side slabs (random sizes) ..... „ | 3 2 |
| 1½ in. to 2 in. ditto, ditto ..... „ | 2 9 |
| HARD YORK— | |
| Delivered at any Goods Station London. | |
| Scappled random blocks .....Per Ft. Cube | 13 3 |
| 6 in. sawn two sides landing to sizes (under 40ft. super.) .....Per Ft. Super | 10 3 |
| 6 in. rubbed two sides ditto ..... „ | 12 1 |
| 4 in. sawn two sides slabs (random sizes) „ | 4 11 |
| 3 in. ditto, ditto „ | 6 2½ |
| 2 in. self-faced random flags ..Per Yard Super | 16 2 |

## WOOD.

### GOOD BUILDING DEAL.

| Inches | £ s. | |
|---|---|---|
| 4 × 11 ..... | 67 10 | per standard |
| 4 × 9 ..... | 67 10 | „ |
| 4 × 8 ..... | 60 0 | „ |
| 4 × 7 ..... | 50 0 | „ |
| 3 × 8 ..... | 48 10 | „ |
| 3 × 7 ..... | 47 10 | „ |
| 2½ × 7 ..... | 47 10 | „ |
| 3 × 6 ..... | 45 0 | „ |
| 3 × 11 ..... | 65 0 | „ |
| 2 × 11 ..... | 65 0 | „ |
| 3 × 9 ..... | 57 10 | „ |
| 2½ × 9 ..... | 57 10 | „ |
| 3 × 4½ ..... | 47 10 | „ |
| 3 × 4 ..... | 47 10 | „ |

### PLANED BOARDS.

| | | |
|---|---|---|
| 1 × 11 .....9..... | 67 10 | „ |
| 1 × 9 ..... | 65 0 | „ |

### PLAIN EDGE FLOORING.

| Inches | | |
|---|---|---|
| ¾ ..... | 40/- | square |
| 1 ..... | 45/- | „ |
| 1 ..... | 52/6 | „ |
| 1¼ ..... | 66/- | „ |
| 1½ ..... | 75/6 | „ |

### TONGUED AND GROOVED FLOORING.

| Inches | | |
|---|---|---|
| 1 ..... | 52/- | square |
| 1¼ ..... | 65/- | „ |
| 1½ ..... | 75/- | „ |

## WOOD (*Continued*).

### MATCHINGS (BEST).

| Inches | | |
|---|---|---|
| ¾ ..... | 36/- | square |
| 1 ..... | 42/6 | „ |
| 1¼ ..... | 54/- | „ |

### BATTENS.

| Inches | £ s. | |
|---|---|---|
| 1 × 2 ..... | 45 0 | per standard |

### SAWN LATHS.

| | | |
|---|---|---|
| Per bundle ..... | 0 6 | 6 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Dry Wainscot Oak, per ft. super, as inch ..... | 0 | 3 | 6 | to | 0 | 4 0 |
| ½ in. do. do. | 0 | 3 | 0 | .. | | — |
| Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch ..... | 0 | 2 | 6 | to | 0 | 3 0 |
| Cuba, Mahogany ..... | 0 | 4 | 0 | to | 0 | 4 6 |
| Teak (Rangoon, Moulmein or Java), per load.. .. | 75 | 0 | 0 | to | 85 | 0 0 |
| American Whitewood planks, per ft. cube .. | 0 | 18 | 0 | to | 1 | 4 0 |
| Scotch Glue, per cwt. .... | 10 | 0 | 0 | .. | | — |
| Liquid Glue, per cwt..... | 6 | 12 | 0 | .. | | — |

## SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

| | | £ s. d. |
|---|---|---|
| Best Blue Bangor Slates, | 24 by 12 ..... | 56 10 0 |
| „ „ „ | 22 by 12 ..... | 46 0 0 |
| First quality „ | 22 by 11 ..... | 42 10 0 |
| „ „ | 20 by 12 ..... | 42 0 0 |
| Best Blue Portmadoc | 20 by 10 ..... | 36 10 0 |
| „ „ | 18 by 10 ..... | 29 10 0 |
| First quality „ | 18 by 9 ..... | 24 5 0 |
| „ „ | 16 by 10 ..... | 22 15 0 |
| „ „ | 16 by 8 ..... | 18 0 0 |

## TILES.

| | Per 1,000 f.o.r. London. £ s. d. |
|---|---|
| Best machine-made tiles from Broseley or Staffordshire district..... | 6 15 0 |
| Ditto hand-made ditto..... | 7 5 0 |
| Ornamental ditto ..... | 7 2 6 |
| Hip and valley tiles (per dozen) ..... | 0 15 0 |

## METALS.

| JOISTS, GIRDERS, &C., TO LONDON STATION PER TON— | £ s. d. |
|---|---|
| R. S. Joists, cut and fitted ..... | 39 0 0 |
| Plain Compound Girders ..... | 43 0 0 |
| „ Stancheons ..... | 45 0 0 |
| In Roof Work ..... | 49 0 0 |

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £15 net value delivered direct from works. 5 per cent. less above gross discounts, carriage forward if sent from London stocks.)

| | Sizes up to and including ¾ in. | | Sizes up to and including 2in. | | Sizes 2½ in. to 6 in. | |
|---|---|---|---|---|---|---|
| | Tubes. | Fittings. | Tubes. | Fittings. | Tubes. | Fittings. |
| Gas .... | + 7½ | + 5 | — 5 | — 2½ | — 17½ | |
| Water .... | +17½ | +15 | Net | + 6½ | — 15 | |
| Steam.... | +28½ | +26½ | + 5 | + 16½ | — 12½ | |
| Gal.Gas.... | +32½ | +30 | + 5 | + 22½ | — 7½ | |
| „ Water | +45 | +42½ | + 10 | + 33½ | — 5 | |
| „ Steam | +57½ | +55 | + 15 | + 45 | — 2½ | |

L.C.C. COATED SOIL PIPES—London Prices ex works.

| | Pipe. | Bends, stock angles. | Branches, stock angles. |
|---|---|---|---|
| | s. d | s. d. | s. d. |
| 2 in. per yd. in 6 fts.. | 6 4 | .. 4 6 | .. 5 5 |
| 2½ in. „ .. | 7 3½ | .. 4 11½ | .. 6 9 |
| 3 in. „ .. | 9 0½ | .. 5 5 | .. 8 1½ |
| 3½ in. „ .. | 10 0 | .. 6 9 | .. 9 5½ |
| 4 in. „ .. | 10 11½ | .. 7 8 | .. 10 9½ |

RAIN-WATER PIPES, &C.

| | Pipe. | Bends, stock angles. | Branches, stock angles. |
|---|---|---|---|
| | s. d. | s. d. | s. d. |
| 2 in. per yd. in 6fts. plain | 5 6 | .. 3 0 | .. 4 0 |
| 2½ in. „ „ .. | 6 0 | .. 3 6 | .. 5 0 |
| 3 in. „ „ .. | 7 2 | .. 4 4 | .. 6 8 |
| 3½ in. „ „ .. | 8 8 | .. 5 4 | .. 7 9 |
| 4 in. „ „ .. | 9 8 | .. 6 4 | .. 9 4 |

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices. 4 in., 13/6. .. 5 in., 16/6. .. 6 in., 19/11.

| | Per ton in London. £ s. d. | | £ s. d. |
|---|---|---|---|
| IRON— | | | |
| Common Bars ..... | 34 10 0 | to | 35 10 0 |
| Staffordshire Crown Bars — good merchant quality | 35 0 0 | .. | 37 0 0 |
| Staffordshire "Marked Bars" ..... | 36 10 0 | .. | 38 10 0 |
| Mild Steel Bars ..... | 36 0 0 | .. | 38 0 0 |
| Steel Bars. Ferro-Concrete quality, basis price .. | 36 0 0 | .. | 38 0 0 |
| Hoop Iron, basis price .. | 44 0 0 | .. | 46 0 0 |
| „ „ Galvanised .. | 62 0 0 | .. | 66 0 0 |
| Sheet Iron, and Soft Steel Black— | | | |
| Ordinary sizes to 20 g. | 50 0 0 | .. | 52 0 0 |
| „ „ „ 24 g. | 51 0 0 | .. | 53 0 0 |
| „ „ „ 26 g. | 53 0 0 | .. | 55 0 0 |
| Sheets Flat Best Soft Steel, C.R. & C.A. quality— | | | |
| Ordinary sizes, 6ft by 2ft. to 3ft. to 20 g. | 58 0 0 | .. | 60 0 0 |
| Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g..... | 59 0 0 | .. | 61 0 0 |
| Ordinary sizes, 6ft. by 2ft. to 3ft. to 26 g... | 61 0 0 | .. | 62 0 0 |
| Flat and Galvanised Corrugated Sheets— | | | |
| Ordinary sizes, 6 ft. to 9ft. 20 g. .....54 | 0 0 | .. | 55 0 0 |

## METALS (*Continued*).

| | Per ton in London. £ s. d. | | £ s. d. |
|---|---|---|---|
| Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g. | 55 0 0 | .. | 56 0 0 |
| Ordinary sizes, 6ft. to 9ft. 26 g. ..... | 57 0 0 | .. | 59 0 0 |
| Sheets Glavanised Flat, Best quality— | | | |
| Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker ... | 56 0 0 | .. | 58 0 0 |
| Best Soft Steel Sheets, 22 g. and 24 g. .... | 57 0 0 | .. | 59 0 0 |
| Best Soft Steel Sheets 26 g. ..... | 60 0 0 | .. | 61 0 0 |
| Cut Nails, 3in. to 6in. .. (under 3in. usual trade extras.) | 47 10 0 | .. | 48 10 0 |

## LEAD, &c.

| | Delivered in London. £ s. d. | | £ s. d. |
|---|---|---|---|
| LEAD Sheet, English, 4 lb. and up ..... | 49 0 0 | .. | — |
| Pipe in coils ..... | 49 10 0 | .. | — |
| Soil Pipe ..... | 52 0 0 | .. | — |
| Compo pipe ..... | 53 0 0 | .. | — |

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

| | | | | | |
|---|---|---|---|---|---|
| Old lead, ex London area, at Mills ..... per ton | 30 | 0 | 0 | .. | — |
| Do., ex country, carriage forward..... per ton | 31 | 0 | 0 | .. | — |
| COPPER— | | | | | |
| Strong Sheet ....per lb. | 0 | 2 | 3 | .. | — |
| Thin „ .... „ | 0 | 2 | 4 | .. | — |
| Copper nails .... „ | 0 | 2 | 3 | .. | — |
| Copper wire .... „ | 0 | 2 | 4 | .. | — |
| TIN—English Ingots „ | 0 | 2 | 9 | .. | — |
| SOLDER—Plumbers' „ | 0 | 1 | 4 | .. | — |
| Tinmen's..... „ | 0 | 1 | 9 | .. | — |
| Blowpipe ..... „ | 0 | 2 | 0 | .. | — |

## GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

| | Per Ft. | | Per Ft. |
|---|---|---|---|
| 15 oz. fourths .... | 7d. | 32 oz. fourths .... | 11d. |
| „ thirds ..... | 7½d. | „ thirds ..... | 1/- |
| 21 „ fourths .... | 9d. | Fluted, Obscured and Enamelled Sheet, | |
| „ thirds ..... | 9½d. | 15 oz. | 10d. |
| 26 „ fourths .. . | 10d. | 21 „ | 1/- |
| „ thirds ..... | 11d. | | |

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

| | Per Ft. |
|---|---|
| ¼ Rolled plate ..... | 6½d. |
| ⅛ Rough rolled and rough cast plate..... | 7½d. |
| ¼ Rough rolled and rough cast plate..... | 8½d. |
| Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white ..... | 7½d. |
| Ditto, tinted ..... | 9½d. |
| Rolled Sheet ..... | 7d. |
| White Rolled Cathedral..... | 7d. |
| Tinted do. ..... | 9d. |

## PAINTS, &c.

| | | £ s. d. |
|---|---|---|
| Raw Linseed Oil | in pipes..... per gallon | 0 7 5 |
| „ „ „ | in barrels .... „ | 0 7 7 |
| „ „ „ | in drums .... „ | 0 7 9 |
| Boiled „ „ | in barrels .... „ | 0 8 1 |
| „ „ „ | in drums .... „ | 0 8 3 |
| Turpentine | in barrels ..... „ | 0 11 3 |
| „ | in drums (10 gall.) .. „ | 0 11 9 |
| Genuine Ground English White Lead, per ton (in not less than 5 cwt. casks.) | | 80 10 0 |
| GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots .....per ton delivered | | 110 15 0 |
| Red Lead, Dry (packages extra) .. per ton | | 60 0 0 |
| Best Linseed Oil Putty ..... per cwt. | | 1 7 0 |
| Filocol..... per cwt. | | 1 0 6 |
| Size. X D Quality..... | | fkn. 0 5 9 |

## VARNISHES, &c.

| | Per gallon. £ s. d. |
|---|---|
| Oak Varnish.....Outside | 0 18 0 |
| Fine ditto ..... ditto | 1 0 0 |
| Fine Copal ..... ditto | 1 1 6 |
| Pale Copal ..... ditto | 1 2 6 |
| Pale Copal Carriage ..... ditto | 1 4 6 |
| Best ditto ..... ditto | 1 14 6 |
| Floor Varnish..... Inside | 0 19 0 |
| Fine Pale Paper ..... ditto | 0 18 0 |
| Fine Copal Cabinet ..... ditto | 1 2 6 |
| Fine Copal flatting ..... ditto | 1 0 6 |
| Hard drying Oak ..... ditto | 0 18 0 |
| Fine Hard drying Oak ..... ditto | 0 19 0 |
| Fine Copal Varnish ..... ditto | 1 0 6 |
| Pale ditto ..... ditto | 1 2 6 |
| Best ditto ..... ditto | 1 14 6 |
| Best Japan Gold Size..... | 0 16 6 |
| Best Black Japan ..... | 1 0 9 |
| Oak and Mahogany Stain (water) .... .. | 0 17 6 |
| Brunswick Black ..... | 0 11 9 |
| Berlin Black..... | 0 19 9 |
| Knotting (patent) ..... | 1 18 6 |
| French and Brush Polish ..... | 1 14 0 |
| Liquid Dryers in Terebine ..... | 0 16 0 |
| Cuirass Black Enamel ..... | 0 7 0 |

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

# CURRENT PRICES FOR BUILDING WORK IN LONDON.*

## EXCAVATOR.

| | | s. | d. |
|---|---|---|---|
| Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep | per yard cube | 25 | 0 |
| Add if in clay | " " | 2 | 0 |
| Add for every additional depth of 6 ft. | " " | 1 | 6 |
| Planking and strutting to trenches | per foot super | 0 | 7½ |
| Do. to sides of excavation, including shoring | " " | 1 | 6 |

## CONCRETOR.

| | | s. | d. |
|---|---|---|---|
| Portland cement concrete in foundation 1 to 6 | per yard cube | 55 | 0 |
| Add if in underpinning in short lengths | " " | 10 | 0 |
| Add if in floors 6 in. thick | " " | 4 | 0 |
| Add if in beams | " " | 5 | 0 |
| Add if aggregate 1 : 2: 4 | " " | 15 | 0 |
| Add for hoisting not exceeding 10 ft. beyond the first 10 ft. | " " | 4 | 6 |

## BRICKLAYER.

| | | £ | s | d. |
|---|---|---|---|---|
| Reduced brickwork in lime mortar and Fletton bricks | per rod | 50 | 15 | 0 |
| Add if in stocks | " | 12 | 10 | 0 |
| Add if in Staffordshire blues | " | 34 | 10 | 0 |
| Add if in Portland cement and sand | " | 4 | 15 | 0 |

FACINGS.

| | | | | |
|---|---|---|---|---|
| Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks | per ft. super | 0 | 0 | 1¼ |

POINTING.

| | | | | |
|---|---|---|---|---|
| Neat flat struck or weathered joint | " " | 0 | 0 | 3½ |

ARCHES.

| | | | | |
|---|---|---|---|---|
| Extra only to the price of ordinary brickwork :— | | | | |
| Fair external in half brick rings | " " | 0 | 1 | 0 |
| Axed in stocks | " " | 0 | 2 | 0 |
| Rubbed and gauged jointed in putty camber or segmental | " | 0 | 7 | 0 |

SUNDRIES.

| | | | | |
|---|---|---|---|---|
| Damp course in double course of slates breaking joint and beaded in Portland cement | " " | 0 | 1 | 8 |
| Setting ordinary register grates and stoves | each | 1 | 5 | 0 |
| Setting kitchener, including fuming flues, &c., with all necessary fire bricks | " | 6 | 15 | 0 |

## ASPHALTER.

| | | s. | d. |
|---|---|---|---|
| Half-inch horizontal damp course | per yard sup. | 9 | 0 |
| Three-quarter-inch vertical damp course | " " | 14 | 3 |
| One inch on flats in two thicknesses | " " | 12 | 0 |
| Angle fillet | per foot run | 0 | 3 |
| Skirting and fillet 6 in. high | " " | 1 | 6 |

## MASON.

| | | s. | d. |
|---|---|---|---|
| York stone templates fixed | per foot cube | 22 | 0 |
| York stone sills fixed | " " | 35 | 0 |
| Bath stone and all labour fixed | " " | 16 | 9 |
| Portland stone fixed | " " | 25 | 9 |

## SLATER.

| | | | | |
|---|---|---|---|---|
| Welsh 16 in. × 8 in. 3 in. lap, including nails | per square | 98 | 0 | |
| Do. 20 in. × 10 in. Do. Do. | " | 115 | 0 | |
| Do. 24 in. × 12 in. Do. Do. | " | 117 | 6 | |

## CARPENTER AND JOINER.

| | | s. | d. |
|---|---|---|---|
| Fir framed in plates | per foot cube | 9 | 6 |
| Do. joists | " " | 10 | 6 |
| Do. roofs, floors and partitions | " " | 11 | 9 |
| Do. trusses | " " | 14 | 0 |

| | | ¾″ | 1″ | 1¼″ | 1½″ |
|---|---|---|---|---|---|
| Deal rough close boarding | per sq. | 60/- | 81/- | 100/- | 108/- |

| | | s. | d. |
|---|---|---|---|
| Flat centering for concrete floor, including struts or hangers | " | 68 | 0 |
| Do. to beams | per ft. sup. | 1 | 10 |
| Centres for arches | " | 2 | 4 |
| Gutter boards and beams | " | 1 | 9 |

| FLOORING. | | ¾″ | 1″ | 1¼″ | 1½″ |
|---|---|---|---|---|---|
| Deal-edges shot | per sq. | | 82/- | 104/- | 120/- |
| Do. tongued and grooved | " | | 88/- | 110/- | 127/- |
| Do. matchings | " | 74/- | 89/- | | |
| Moulded skirting, including backings and grounds | per ft. sup. | 2/4 | 2/8 | 3/2 | 3/8 |

SASHES AND FRAMES.

| | | s. | d. |
|---|---|---|---|
| One-and-a-half moulded sashes or casements | per foot super | 2 | 0 |
| Two Do. Do. Do. | " " | 2 | 6 |
| Add for fitting and fixing | " " | 0 | 6 |
| Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights ; average size | " | 5 | 6 |

| DOORS. | | 1½″ | 1¾″ | 2″ |
|---|---|---|---|---|
| Two-panel square framed | per ft. sup. | 2/8 | 2/11 | 3/1 |
| Four-panel Do. | " | 3/- | 3/4 | 3/7 |
| Two-panel moulded both sides | " | 3/4 | 3/7 | 3/10 |
| Four-panel Do. Do. | " | 3/8 | 3/11 | 4/2 |

## CARPENTER AND JOINER—continued.

FRAMES.

| | | s. | d. |
|---|---|---|---|
| Deal wrot moulded and rebated | per foot cube | 22 | 0 |

| | | 1″ | 1¼″ | 1½″ |
|---|---|---|---|---|
| Plain deal jamb linings framed | per ft. sup. | 2/3 | 2/5 | 2/9 |
| Deal shelves and bearers | " | 2/- | 2/2 | 2/3 |
| Add if cross tongued | " | 2/- | 2/- | 2/- |

STAIRCASES.

| | | 1″ | 1¼″ | 1½″ | 2″ | 2½″ |
|---|---|---|---|---|---|---|
| Deal treads and risers in and including rough bracelets | | 3/4 | 4/- | 4/8 | — | — |
| Deal strings wrot in both sides and framed | " | 4/6 | 4/9 | — | — | — |

| | | s. | d. |
|---|---|---|---|
| Housings for steps and risers | each | 1 | 0 |
| Deal balusters, 1 in. × 1¼ in. | per ft. run. | 0 | 9 |
| Mahogany handrail ; average 3 in. × 3 in. | " " | 6 | 3 |
| Add if ramped | " " | 12 | 6 |
| Add if wreathed | " " | 25 | 0 |

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

| | | | |
|---|---|---|---|
| 6 in. barrel bolts | 9d. | Rim locks | 2/6 |
| Sash fasteners | 1/- | Mortice locks | 5/6 |
| Casement fasteners | 1/6 | Patent spring hinges and letting in to floor and making good | 20/- |
| Casement stays | 1/3 | | |
| Cupboard locks | 1/6 | | |

## FOUNDER AND SMITH.

| | | s. | d. |
|---|---|---|---|
| Rolled steel joists | per cwt. | 44 | 10 |
| Plain compound girders | " | 48 | 10 |
| Do. stanchions | " | 50 | 10 |
| In roof work | " | 54 | 10 |

## RAIN-WATER GOODS.

| | | 3″ | 4″ | 5″ | 6″ |
|---|---|---|---|---|---|
| Half-round plain rebated joints | ft. run | 2/- | 2/6 | 3/9 | 4/3 |
| Ogee Do. Do. | " | 2/6 | 3/3 | 4/- | 5/- |
| Rain-water pipes with ears | " | 2/11 | 3/9 | | |
| Extra for shoes and bends | each | 4/7 | 6/3 | | |
| Do. stopped ends | " | 2/- | 2/6 | 3/9 | 4/3 |
| Do. nozzles for inlets | " | 2/3 | 2/9 | 4/- | 4/6 |

## PLUMBER.

| | | s. | d. |
|---|---|---|---|
| Milled lead and laying in flashings and gutters | per cwt. | 79 | 0 |
| Do. Do. in flats | " | 74 | 0 |
| Extra labour and solder in coated cesspools | each | 8 | 0 |
| Welt joint | per ft. run. | 0 | 6 |
| Soldered seam | " " | 2 | 3 |
| Copper nailing | " " | 0 | 8 |

| | | ½″ | ¾″ | 1″ | 1½″ | 2″ | 4″ |
|---|---|---|---|---|---|---|---|
| Drawn lead waste | per ft. run | 1/2 | 1/11 | 2/3 | 4/- | 5/- | |
| Do. service | " | 1/10 | 2/5 | 3/- | 4/9 | | |
| Do. soil | " | | | | | | 8/- |
| Bends in lead pipe | each | | | | | 4/- | 10/- |
| Solderer's stop ends | " | 1/6 | 2/- | 2/6 | 3/6 | 4/3 | |
| Red lead joints | " | 1/1 | 1/4 | 1/7 | 2/4 | 3/- | 6/- |
| Wiped soldered joints | " | 3/6 | 4/3 | 5/- | 6/- | 8/- | 12/- |
| Lead traps and cleaning screws | " | | | | 18/- | 24/- | |
| Bib cocks and joints | " | 7/6 | 11/3 | 18/- | 48/- | | |
| Stop cocks and joints | " | 18/- | 20/- | 30/- | 75/- | | |

## PLASTERER.

| | | s. | d. |
|---|---|---|---|
| Render, float and set in lime and hair | per yard sup. | 3 | 4 |
| Do. Do. siripite | " " | 3 | 9 |
| Do. Do. Keen's | " " | 5 | 0 |
| Add sawn lathing | " " | 2 | 0 |
| Add metal lathing | " " | 3 | 0 |
| Portland cement screed | " " | 3 | 0 |
| Do. plain face | " " | 4 | 6 |
| Mouldings in plaster | per 1 girth | 0 | 3 |
| One-and-a-half granolithic pavings | per yard sup. | 6 | 9 |

## GLAZIER.

| | | s. | d. |
|---|---|---|---|
| 21 oz. sheet plain | per foot sup. | 1 | 10 |
| 26 oz. Do. | " " | 2 | 0 |
| Obscured sheet | " " | 2 | 3 |
| ⅛ in. rolled plate | " " | 1 | 3½ |
| ⅛ in. rough rolled or cast plate | " " | 1 | 4½ |
| ¼ in. wired cast plate | " " | 1 | 9½ |

## PAINTER.

| | | s. | d. |
|---|---|---|---|
| Preparing and distempering, 2 coats | per yard sup. | 1 | 6 |
| Knotting and priming | " " | 1 | 0 |
| Plain painting 1 coat | " " | 1 | 6 |
| Do. 2 coats | " " | 2 | 4 |
| Do. 3 coats | " " | 3 | 2 |
| Do. 4 coats | " " | 4 | 0 |
| Graining | " " | 3 | 0 |
| Varnishing twice | " " | 2 | 6 |
| Sizing | " " | 0 | 4 |
| Flatting | " " | 0 | 9 |
| Enamel | " " | 2 | 0 |
| Wax polishing | per foot sup. | 0 | 11 |
| French polishing | " " | 1 | 9 |
| Preparing for and hanging paper | per piece | 2/- to 5/- | |

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

## TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him *not later than first post on Wednesday.*

* Denotes *accepted.* † Denotes *provisionally accepted*
‡ Denotes *recommended for acceptance.*
‖ Denotes *accepted subject to modifications.*

BIRKENHEAD.—For erection of school in Pilgrim-street, for the T.C. :—
*F. Thomas & Son, Birkenhead ....£21,186

BIRMINGHAM.—For the erection of houses, for the T.C. :—

| | Scheme | No. of Houses. | Total cost, including profit and overhead charges | Average price per house. |
|---|---|---|---|---|
| *H. M. Grant, Ltd. | Pineapple Farm | 132 | £122,809 1 | £930 7 5 |
| *Dare & Waring | Yardley-road | 42 | 38,285 2 | 911 11 0 |
| *Bridgewater Bros. | Chester-road | 22 | 21,738 0 | 988 2 0 |
| *E. T. Lawson | Victoria-road, Stechford | 6 | 5,340 0 | 890 0 0 |
| *E. G. Brown & Sons | Lyttleton-road, Stechford | 6 | 5,403 0 | 900 10 0 |
| *W. Darby & Son | Shortheath-road, Erdington | 8 | 7,416 16 | 927 2 0 |

COLWYN BAY.—For erection of 22 houses in Church-road, for the U.D.C. :—
*Wooller & Son, Rhos-on-Sea..... £22,100

BALING.—Repairs to attendant's cottage at Baling reservoir, for the Metropolitan Water Board :—
*F. T. Cook ..... £118 0 0
Berdoe ..... 128 18 9
Hill ..... 132 0 0
Chapman ..... 198 0 0

GLASGOW.—For carpentry, joiner and ironmonger works in connection with extension of municipal buildings, for the T.C. :—
*James Morrison & Son .....£52,588 8 2

GLASGOW.—Repairs to roof of Kelvingrove Art Galleries, for the T.C. :—
*Helliwell & Co. .....£3,612

KEGWORTH.—For the erection of 6 houses at the Midland Agricultural and Dairy College. Messrs. Pick, Everard & Keay, architects, Leicester. Quantities by Mr. John T. Burt, Leicester :—
*F. Perks & Son, Ltd., Long Eaton .. £6,872
J. E. Johnson & Son, Ltd., Leicester 7,720
T. Barlow & Co., Nottingham ..... 7,510
W. Moss & Sons, Ltd., Loughborough 7,494
T. Barker & Sons, Loughborough .. 7,074

KILMARNOCK.—For the erection of 156 houses for the Corporation. :—
Kilmarnock Master Masons' Association, Kilmarnock .. £60,081 14 0
Kilmarnock Master Joiners' Association, *per* J. Rome & Sons, Kilmarnock .... 43,995 1 2
R. C. Robertson & Sons (*glazier*), Kilmarnock .... 723 7 10
The Kilmarnock Members of the Ayrshire Master Slaters' Association, Kilmarnock .. 15,034 15 6
Glasgow and West of Scotland Master Plumbers' Association (Kilmarnock Branch), Kilmarnock ..... 20,493 1 3
Ayrshire Master Plasterers' Association (Kilmarnock Branch), Kilmarnock .... 12,375 5 0
Logan & Gray (*painter work*), Glasgow ..... 2,482 0 0
D. Henderson (*electric light*), Glasgow ..... 2,565 8 6

KINGSTON-ON-THAMES.—For sewering and road work in connection with housing scheme, for the T.C.:—
*M. S. Kavanagh & Co..... £36,360 5 3

LIVERPOOL.—The following tenders have been accepted by the T.C. :—
*D. Roberts, Son & Co.. To erect 72 houses on Ashes, Woodlands and Fairfield Estates, and to sell same to the Council.
* E. Ellis .. Erection of 100 houses on the Edge-lane Drive Estate.

LIVERPOOL.—For alterations and painting at Wavertree Police Station, for the T.C. :—
*Crowther & Bailey..... £505 5

LIVERPOOL.—For external repairs and painting at the Huskisson-street, for the T.C. :—
*W. & A. Piercy..... £119

LONDON.—For cleaning and painting at London County Council Schools. The tenders marked with an (*a*) are qualified as regards cost of labour and materials, and (*b*) as corrected :—

*List B* 1—
*W. J. Dixon—The Alma, Bermondsey, W. ..... (*a*) £1,652 18 0
*Triggs & Co.—Battersea Park-road, Battersea, N. ..... (*a*) 1,852 0 0
*C. Berger—Beethoven-street, Paddington, N. ..... (*a*) 1,750 0 0
*A. Coldman & Son—Bellenden-road, Camberwell, N.W..... (*a*) 1,886 15 0
*E. A. Roome & Co., Ltd.—Benthal-road, Hackney, N. ..... (*b*) 1,969 2 0
*H. Groves & Son, Blackheath-road, Greenwich ..... (*a*) 2,185 0 0
*H. Meckhonik—Brackenbury-road, Hammersmith, S. ..... 2,190 0 0
*Stoneley & Co.—Bromley Hall-road Poplar, S. ..... (*a*) 1,989 0 0
*Triggs & Co.—Cater-street, Camberwell, N. ..... (*a*) 1,960 0 0
*W. Bickerton—Clifton-hill, Deptford ..... 1,882 0 0
*J. R. Sims—Crampton-street, Southwark, C. ..... 2,840 0 0
*The British Renovating Co., Ltd.—Deptford Park, Deptford..... (*a*) 1,013 8 3
*Edwards Construction Co., Ltd.—The Dreadnought, Greenwich.. 1,754 12 0
*Stevens & Sons—Duncombe-road, Islington, N. ..... (*a*) 2,426 0 0
*J. H. Sutch & Sons—Earl-street, Woolwich, E. ..... 1,272 0 0
*Walter Lawrence & Son—Elizabeth street, Woolwich, W. ..... (*a*) 1,654 0 0
*W. C. Lole & Co.—Everington-street, Fulham, W. ..... (*a*) 2,591 0 0
*G. Hill & Son, Ltd.—Franciscan-road, Balham and Tooting.... 1,060 0 0
*The British Renovating Co., Ltd.—The Hay Currie, Poplar, S..... (*a*) 1,070 0 0
*Walter Lawrence & Son, Ltd.—Hoxton House, Shoreditch.... (*a*) 2,350 0 0
*Triggs & Co.—Kennington-road, Kennington ..... (*a*) 1,530 0 0
*Triggs & Co.—Lyham-road, Brixton (*a*) £1,936 0 0
*C. Pugh—Lyndhurst-grove, Camberwell, N.W. ..... 1,443 0 0
*Edwards Construction Co., Ltd.—Manor-lane, Lewisham, E.... 1,741 5 0
*J. H. Sutch & Sons—Maze-hill, Greenwich ..... 1,477 0 0
*Stoneley & Co.—Monteith-road, Bow and Bromley..... (*a*) 2,593 0 0
*H. Meckonik—North End-road, Fulham, E. ..... 1,252 0 0
*W. Fitch—Priory-grove, Kennington ..... (*a*) 1,527 0 0
*The British Renovating Co., Ltd.—Rotherhithe New-road, Rotherhithe ..... (*a*) 1,110 16 0
*Stapleton & Sons—Rushmore-road, Hackney, N. ..... (*a*) 2,438 0 0
*A. & F. Polden—St. Dunstan's-road, Fulham, W. ..... 3,490 0 0
*H. A. Inns—St. John's-road, Shoreditch ..... (*a*) 2,730 0 0
*G. Nelson Watts—Saunders-road, Hammersmith, N. ..... 1,535 0 0
*T. Brown & Son—Stockwell-road, Brixton ..... (*a*) 2,666 0 0
*J. Garrett & Son—Warple-way, Wandsworth, C. ..... (*a*) 1,969 0 0
*G. Nelson Watts—Wornington-road, Kensington, N. ..... (*a*) 2,617 10 0

*List B* 2.
*W. Daley & Co.—The Bousefield, Kensington, S. ..... (*b*) 1,525 0 0
*N. Harris & Sons—Brockley Central and Mantle-road, Deptford ..... (*a*) 2,548 10 0
*J. C. Mather—Caledonian-road, Islington ..... 1,314 0 0
*W. Young—Cobourg-road, Camberwell, N. ..... 2,476 0 0
*C. P. Roberts & Co., Ltd.—Daubeney-road, Hackney, S..... (*a*) 2,427 0 0
*G. Butters—Gainsborough-road, Hackney, S. ..... 2,315 16 0
*Crabb & Son—Heber-road, Dulwich (*a*) 2,189 0 0
*A. & F. Polden—Hugon-road, Fulham, E. ..... 1,814 0 0
*E. A. Roome & Co.—Lauriston-road and Derby-road, Hackney, S. ..... (*b*) 2,378 0 0
*Stevens & Sons—Montem-street, Islington, N. ..... (*a*) 1,387 0 0
*J. Scott Fenn—Plumstead-road, Woolwich, E. ..... (*a*) 1,683 0 0
*Marchant, Hirst & Co.—Pooles Park, Islington, N. ..... (*a*) 1,485 0 0
*J. Haydon & Sons—Rutland-street, Mile End ..... (*a*) 1,730 0 0
*W. J. Clemens—St. Paul's-road, Limehouse ..... 1,395 10 0
*J. Scott Fenn—Sherington-road, Central, Greenwich ..... (*a*) 1,287 18 0
*H. Groves & Son—Trundleys-road, Deptford ..... (*a*) 1,196 0 0
*C. P. Roberts & Co., Ltd.—Wilton-road, Hackney, C. ..... (*a*) 2,209 0 0
*Stevens & Sons—Yerbury-road, Islington, N. ..... (*a*) 1,522 0 0

LONDON.—For repairs and decorations at the Disinfecting Station, for the Wandsworth B.C. :—
*F. J. Rashbrook..... £231

LONDON.—Erection of pumping station buildings at Shooter's-hill, for the Metropolitan Water Board :—
*W. Pollock ..... £6,823 0 5


# WANTED

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# £25,000

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**93/4, Chancery Lane, W.C.2.**

LONDON.—Re-decoration of 1 and 1A, Aubrey Walk, Campden Hill, for the Metropolitan Water Board :—

| | | | |
|---|---|---|---|
| *Hills, Ltd. | £125 | 0 | 0 |
| W. A. Harris | 172 | 0 | 0 |
| W. Wise & Sons | 177 | 17 | 6 |

LONDON.—Repairs at 1B, Oxford-road, Kilburn, for the Metropolitan Water Board :—

| | | | |
|---|---|---|---|
| *P. R. Atkins | £142 | 16 | 0 |
| E. T. Hill | 145 | 0 | 0 |
| Chapman & Son | 190 | 0 | 0 |

LONG SUTTON.—For the erection of 5 pairs of houses in Bridge-road, for the U.D.C. Mr. F. Burdett-Ward, architect, 8, South Bank, Wisbech. Quantities by the architect :—

*Wright & Wilson, Ltd., Terrington St. Clement, near King's Lynn .. £9,369

MAYBOLE.—For the erection of houses, for the T.C. :—

| | | | |
|---|---|---|---|
| *J. & E. Maltman, Maybole (*brickwork*) | £20,102 | 0 | 0 |
| D. Porter & Sons, Crosshill (*brickwork*) | 20,169 | 0 | 0 |
| *D. Watret, Maybole (*joiner*) .. | 15,078 | 0 | 0 |
| William Paton & Sons, Ayr (*joiner*) | 17,773 | 0 | 0 |
| *D. Watret, Maybole (*glazier*).. | 168 | 0 | 0 |
| William Paton & Sons, Ayr (*glazier*) | 220 | 16 | 7 |
| *William Auld & Sons, Ayr (*slater and plumber*) | 11,530 | 0 | 0 |
| McIlwraith, Cowan & Co., Ayr (*slater and plumber*) | 11,562 | 0 | 0 |
| *A. Ballantune, Ayr (*roughcast*) | 1,695 | 0 | 0 |
| William Auld & Sons, Ayr (*roughcast*) | 1,760 | 0 | 0 |
| *John Kerr, Maybole (*plaster*) | 5,472 | 0 | 0 |
| D. Meikle Ochiltree (*plaster*) .. | 5,911 | 0 | 0 |
| *J. G. Rowan, Maybole (*painter*) | 1,449 | 0 | 0 |
| McGilvray & McCulloch, Ayr (*painter*) | 1,725 | 0 | 0 |

MERIDEN.—For erection of 100 houses, for the R.D.C. :—

*Sherif & Whitehouse, at £850 and £950 per house of non-parlour and parlour type respectively.

PERSHORE.—For the erection of 10 pairs of cottages at Wyre and Fladbury, for the R.D.C. :—Mr. Hardold E. Dicks, architect, Evesham :—

Espley & Co., Ltd .....£19,089 10 11
(After modifications; including all outside works)

SALFORD.—For supply of 2,000 yards of 4 in. socket and spigot pipes, for the Gas Committee of the Corporation :—

*Stanton Ironworks Co..... £1,131 5

SALFORD.—Construction of foundations for converter at Electricity Works, for the T.C. :—

*Smith & Briggs, Old Traffold..... £241

STONE.—For repairs to Copmere End culvert, for the Stone R.D.C. :—

*Saunders & Torrance .....£335

SIDMOUTH.—For erection of 56 houses, including paths and drainage, for the U.D.C. :—

| | |
|---|---|
| *G. Northcote, Sidmouth | £61,164 |
| Sisterson, Sidmouth | 64,899 |
| Coles & Son, Ltd., Plymouth .. | 66,209 |
| Ryall, Newton Poppleford ..... | 66,921 |
| Pittard & Son, Langport ..... | 69,670 |
| N. Pratt & Son, Ltd., Clyst St. Mary.. | 79,929 |

SOUTHEND-ON-SEA.—For private street works, for the T.C. :—

| | Amount of Tender. | | | Cost of Material supplied by the Corporation. |
|---|---|---|---|---|
| * A. A. Jenner— | | | | |
| Cheltenham-drive .....£809 | 4 | 10 | .. | £473 |
| Olivia-drive ..... 853 | 13 | 4 | .. | 461 |
| Madeira-avenue ..... 809 | 19 | 8 | .. | 473 |
| Station-road, Leigh .... 600 | 5 | 10 | .. | 373 |

SOUTHEND-ON-SEA.—For works in connection with the Commercial Secondary School, for the T.C. :—

| | | | |
|---|---|---|---|
| *Watkin Heating Co. (*heating apparatus*) | £162 | 0 | 0 |
| *Doulton & Co. (*laboratory fittings*) | 84 | 11 | 5 |
| *Davey & Armitage (*benches*) .... | 601 | 0 | 0 |
| *Davey & Armitage (*provision of cycle shed*) | 146 | 0 | 0 |

SOUTHEND-ON-SEA.—For erection of School Clinic, for the T.C. :—

*Gunite Construction Co. .....£2,760

SOUTHWICK-ON-WEAR.—For the erection of 8 houses (16 flats) in Dryden-street; also 16 flats Shakespeare-street and 16 flats Beaumont-street, for the U.D.C. Mr. W. B. Thomas, architect, Council Offices, Southwick-on-Wear :—

*J. W. White, High Barnes, Sunderland .....£42,240

### Building Combines in America.

According to reports from the United States an extraordinary state of affairs in the building industry is being brought to light by evidence given before the Joint Legislative Committee which is investigating the cause of the shortage of dwelling-houses. "The first two sittings (of the Committee)," it is stated, "have proved that graft is still a most lucrative practice in New York. . . . The plumbing contractors of Greater New York are associated for mutual profit, protection, and the elimination of 'unfair competition' through a Broadway lawyer; for like purposes the building, stone, and other large contractors are associated through the same person." It was also stated in evidence that the organiser of the building trades' operatives' association, who enjoys a salary of £6,000 a year, was in one case paid a sum of 25,000 dols. by a contractor in order to stop a strike on a large contract.

### London University Site.

The Senate of London University decided last week to accept the Government's offer of a new site for the University buildings at Bloomsbury, subject to the provisions that the grants made for maintenance, rates, &c., should not be counted as part of the grants made to universities for educational purposes, that the allocation of the site between the various buildings shall be at the sole discretion of the Senate, that the University and King's College shall retain full possession of their present sites and buildings until the new buildings are ready for occupation and are free from debt, and that the new buildings for the University headquarters shall be in accordance with plans to be decided upon between the Senate and the Treasury, and shall afford not less than 50 per cent. more floor space than is now allocated in the buildings at South Kensington and for the separate use of the University. The Senate assumes that the offer does not incidentally involve curtailing the work of the schools of the University which are not now, nor in the future will be, situated in the neighbourhood of the Bloomsbury site.

### London Troops' Memorial.

The monument erected in front of the Royal Exchange to the memory of the London troops who fell in the war is to be unveiled by the Duke of Connaught on November 12. The memorial was designed by Sir Aston Webb, P.R.A., and executed by Messrs. Trollope & Colls, Ltd.


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